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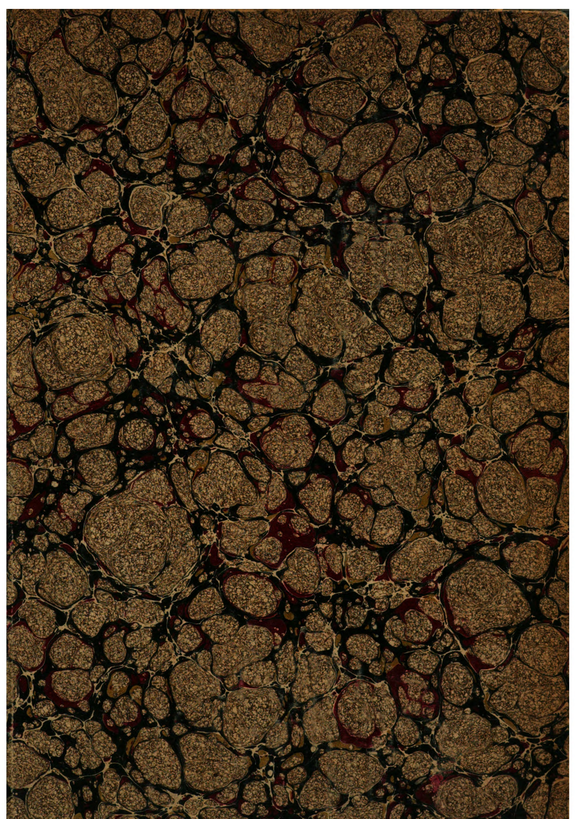
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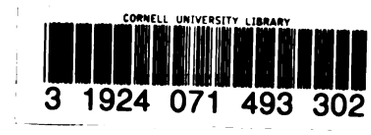
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DEVOTED TO THE AUTOMOBILE
And Kindred Interests

Volume V.
No. 1.

New York, N. Y., U. S. A., Thursday, October 2, 1902.

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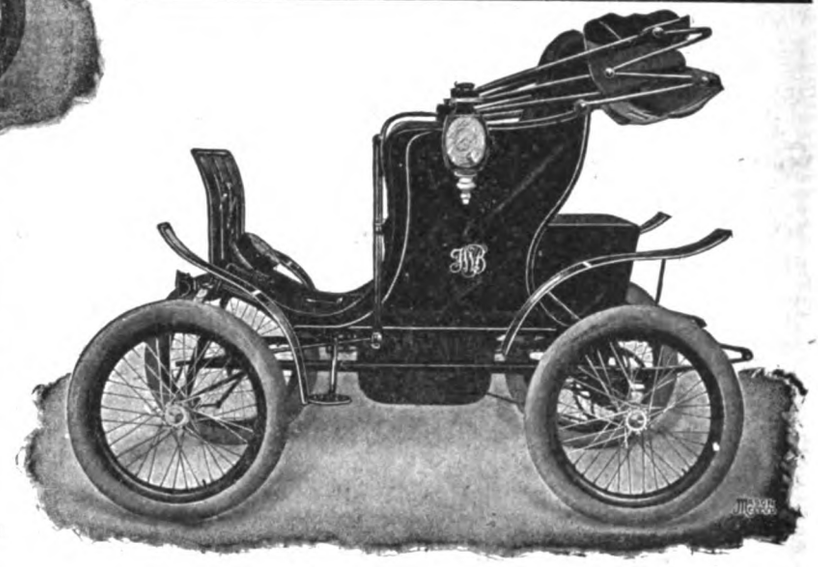
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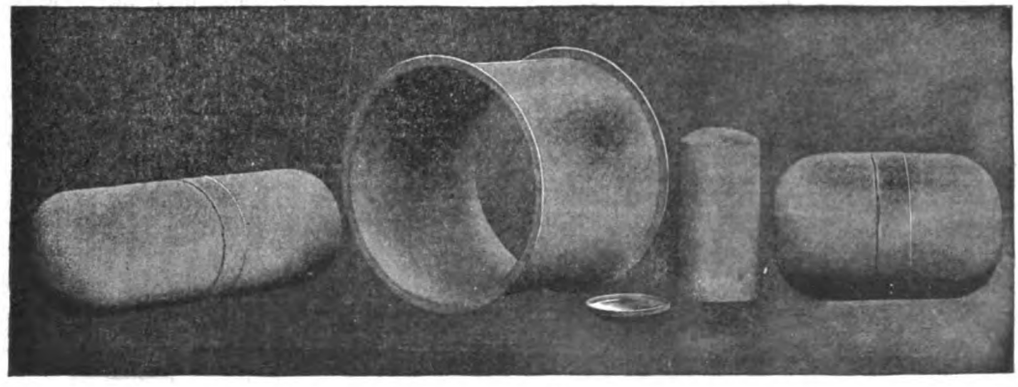
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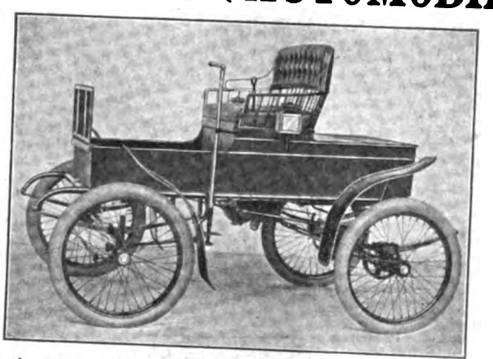
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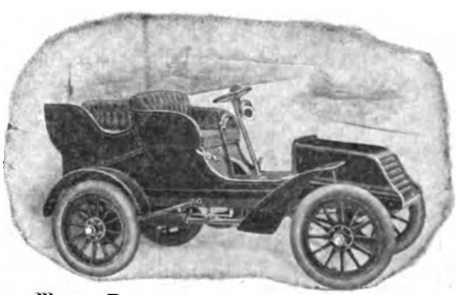
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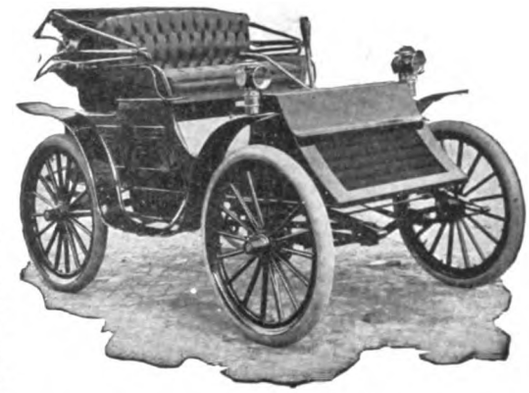
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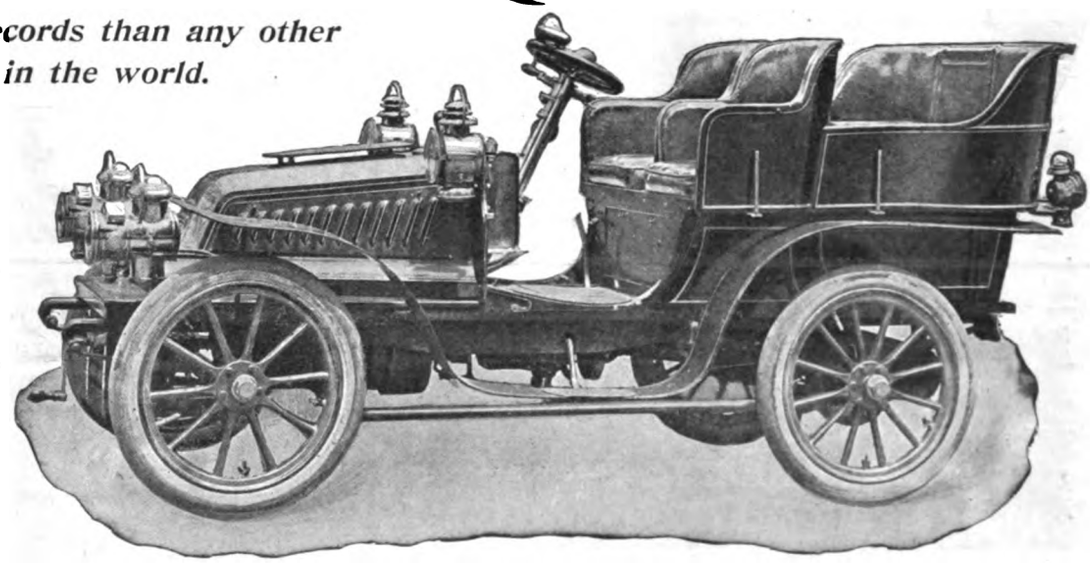
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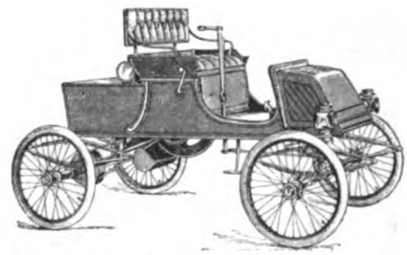
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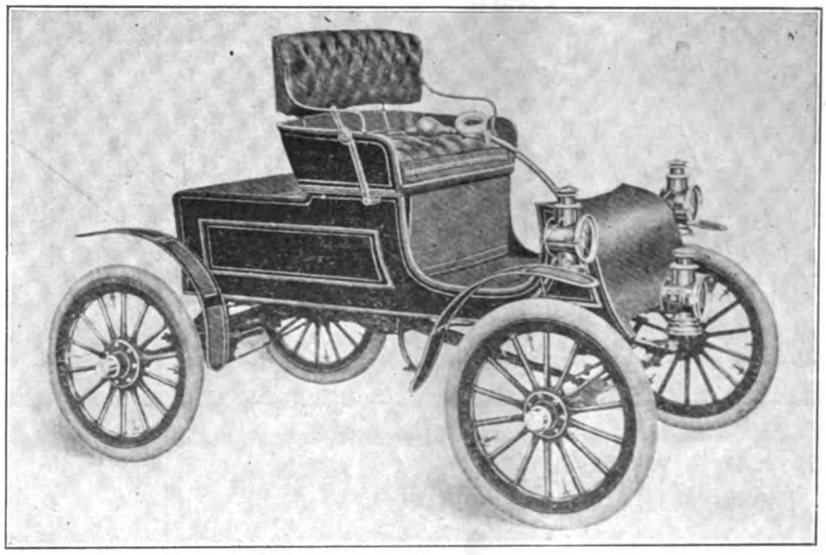
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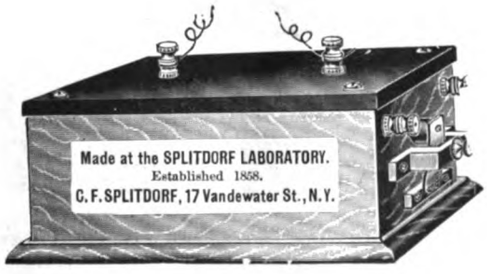
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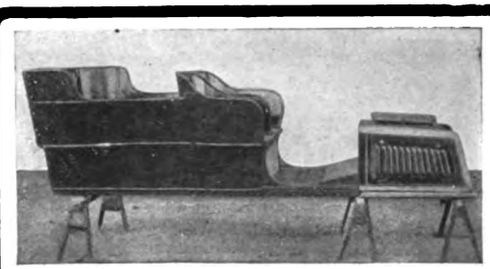


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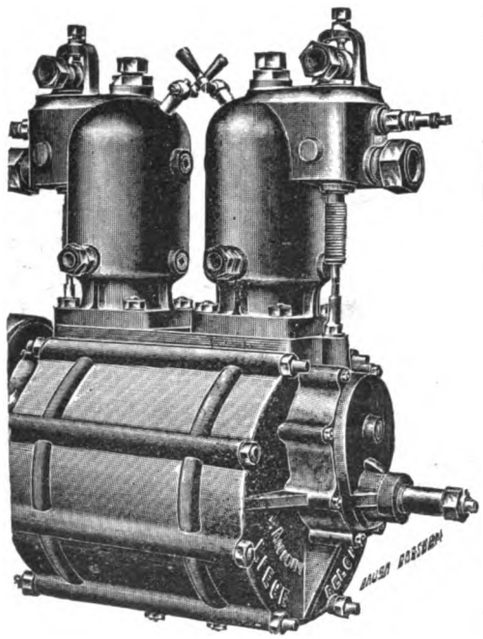
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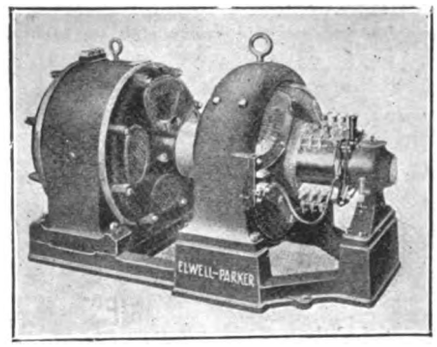
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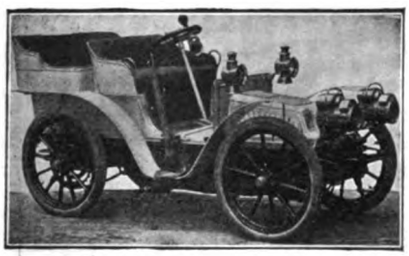
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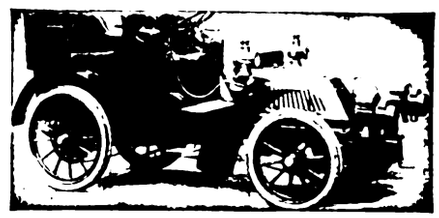
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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, October 2, 1902. No. 1

OVERFLOW PROVIDED FOR

Restaurant and Possibly Basement to be Used for Show Purposes—Additional Exhibitors.

With the Automobile Show at Madison Square Garden, this city, three and one-half months distant, and the application lists opened less than one month ago, the rush for room has been so great that all the space has been contracted for except four accessory stands in the gallery.

After strenuous reckoning the management of the Madison Square Garden has arranged to care for the overflow of applicants for space. As was intimated last week, it has been decided to convert the restaurant into an exhibition hall; and as, despite the additional space obtained thereby, the demand still continues, the management is now figuring on bringing the basement into use for display purposes. An architect is at work drawing plans for spaces in the basement, which will be decorated and amply lighted.

A representative as well as an enormous show is thus assured, one that will be in every way worthy of the industry and of the interest taken in it by the public.

It is stated by the management that no motor bicycles will be permitted on exhibition. Automobiles and parts and accessories exclusively will be shown, the ground being taken that this is an automobile show, pure and simple. The additions to the list since last week are as follows:

Grout Bros., Orange Mass.
Conrad Motor Carriage Co., Buffalo, N. Y.
Haynes-Apperson Co., Kokomo, Ind.
Electric Vehicle Co., Hartford, Conn.
Automobile Co. of America., Jersey City, N. J.
Cleveland Automobile Co., Cleveland, O.
Adams & McMurtry Co., New York.
Centaur Motor Vehicle Co., Buffalo, N. Y.
Webster Automobile Mfg. Co., New York.
Hoffman Automobile Mfg. Co., Cleveland, O.
Prescott Automobile Mfg. Co., Passaic, N. J.
Duryea Power Co., Reading, Pa.
New Process Raw Hide Co., Boston, Mass.
Firestone Tire Co., Akron, O.
Post & Lester, Hartford, Conn.
Homan & Schultz, New York.
Consolidated Rubber Tire Co., Akron, O.
A. H. Funke, New York.
International Automobile and Vehicle Tire Co., New York.
Weston-Mott Co., Utica, N. Y.
C. F. Splitdorf, New York.
National Carbon Co., Cleveland, O.

German-American Bankruptcy.

Little surprise will be occasioned by the announcement that a petition in involuntary bankruptcy has been filed against the German-American Automobile Co., of Nos. 134 to 150 West 143d street, by the following creditors: James Macnaughton, $1,708 for four months' salary as general manager at $5,000 a year; John L. Schultz, $425, for two months' salary as superintendent of the factory at $3,000 a year, and Bain & Law, $64, for materials.

It is alleged that the company is insolvent, and has paid money and turned over funds and assets to certain creditors to prefer them. The company was incorporated on January 22, 1902, with a capital stock of $50,000; W. N. Beach became president and Thomas H. Gillespie treasurer. Morris J. Hirsch is the attorney for the petitioning creditors.

The concern was really little more than a name, as far as its influence in the trade was concerned. The appearance of its first vehicle was almost contemporaneous with the news of the failure. It operated a small factory in 143d street, this city.

Declares Provisional Dividend.

Creditors of the Steam Vehicle Co. of America, Reading, Pa., will be interested to learn that a dividend has been declared by C. H. Ruhl, referee in bankruptcy. The dividend, which amounts to .30164—just over 30 cents on the dollar—will be paid at the office of Referee Ruhl, 534 Washington street, Reading, Pa., on Saturday, October 11, "unless exception be filed thereto," as Mr. Ruhl cautiously adds.

WINTON AND CANNON

Were the Features of Providence Meet—Former Made Several New Records.

As was the case a year ago, the spectacular features of the race meet of the Rhode Island Automobile Club at Narragansett Park, R. I., on September 24, were furnished by the contests against Father Time. In place of Fournier and his Mors, Alexander Winton and his "Bullet" upheld the gasolene banner, while George C. Cannon in his special built flyer performed a similar service for the steam adherents. Without these two stars the races would have fallen rather flat.

When 2 o'clock came the stands of the famous old inclosure were fairly well filled with a representative and brilliant crowd of spectators. Headed by Governor Kimball and his staff, many of Providence's "best people" braved the rather threatening weather in their desire to witness another afternoon of automobile racing. With them were automobilists from the city and surrounding country, Boston and New York both having good sized delegations present. Men who knew little or nothing about automobiles, but whose love for sport of any kind was the magnet that drew them to the scene, completed the gathering. In all there were nearly 5,000 people there.

Both sides of the fence inclosing the track were filled for a considerable distance on each side of the wire. Inside of it more than a hundred automobiles were lined up, in close proximity to a good showing of horse drawn vehicles.

The racing itself was marred by two features which have been disagreeably prevalent at nearly all automobile meets. Reference is had to the paucity of entrants and starters and to the lack of real contests between closely matched cars. In these particulars the Rhode Island meet was a little better off than the Brighton Beach affair, for example, but the improvement was not marked. Processions and close approaches to walkovers were much more numerous than was desir-

(Continued on page 22)

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NOTHING TOO STEEP

Latest European Hill Climbing Successes Were up a Mountain Side.

French Bureau Motor World,
2 Rue d'Abbeville.

Paris, Sept, 19.—Who would have imagined less than two years ago that an automobile would climb in 27 minutes one of the steepest gradients in Europe, having a length of 13.6 miles and an average incline of 8 per cent, with a maximum rise for a thousand yards of 13 per cent? When these tests were first organized on kilometre gradients it was considered very doubtful whether any large proportion of the cars would be able to reach the top without the motor getting hot and seizing. The engines have to develop their maximum power without a moment's pause and this, too, at a time when the relatively low speed of the vehicles diminishes the cooling efficiency of the radiators. And yet despite the severe character of the tests the motors made light work of the hills. There were few instances of failures among the scores of competing cars, and finding that nothing around Paris would test the efficiency of the motors it was found necessary to go elsewhere. The Automobile Club of Salon accordingly included a hill climbing test in their programme of events which was decided this week down South, and the cars had to race up the straight and steep road of Mont Ventoux, one of the big mountains of the Alps, rising to a height of something like 5,500 feet.

ONLY ONE FAILED.

There were sixteen vehicles and motor cycles competing in the climb, and of these only one failed to get to the top through a derangement to one of the valves. M. P. Chauchard, on his 70 horsepower Panhard did a remarkable performance by racing up the thirteen miles of mountain road in 27:17, beating Junavon on a Rochet-Schneider, by four and one-half minutes. The performance of the Rochet-Schneider was quite as meritorious as that of the Panhard, for the vehicle was really a light carriage, and failing to get within the limit of weight by a few pounds it had to start with the big vehicles. Its power was probably not much more than a third of the Panhard. The Rochet-Schneiders are manufactured by a firm of that name in Lyons who for years have been turning out automobiles of different types, changed and modified according to the results of long experience, and the new vehicles which have been doing so well in the events in which they have taken part are an almost exact imitation of the Mercedes. Another type of car which has borrowed a good deal from the famous German car is the Turcat-Méry constructed in Marseilles and also built under license by De Dietrich, of Lunéville. Two of these cars competed, one getting to the top of Mont Ventoux in 35 minutes and the other in 39 minutes, while a new make of car by A. Richard took more than two hours. All the other events were carried off by Clément who won in the light carriage class in 33:19, beating a Darracq by 2½ minutes, and he also did best among the voiturettes in 43:35, while he carried off the motocycle events, making in all five first places. It is rare that a single firm carries off such a series of victories, but it is true that in two events Clément had no one to compete against him. Now that Mont Ventoux has been vanquished so easily it is difficult to find any other accessible mountain which is likely to prove too much for the conquering automobile.

STRONG WINDS AND INCIDENTS.

Another event organized by the Automobile Club de Salon was a race between Salon and Arles where there is a 23 mile stretch of magnificent road, and as the vehicles went over the course four times they covered a total distance of 92 miles. Though the weather was fine, the very strong wind that was blowing entirely destroyed any hopes of record speeds being attained, and the incidents on the road were moreover pretty numerous, the first being the trouble Chauchard had with a valve which considerably reduced his time on the first two rounds. On remedying this defect he did the next two rounds at the rate of sixty miles an hour and covered the full distance in 1:35:13. The Peugeot, driven by Renaux, was going remarkably well until it had to withdraw through the pump failing to work. The next in the big carriage class was a Turcat-Méry, which took 1:57:49. Among the light carriages the Darracq of Hemery won in 1:47:17, beating the Panhard of Gondoin by a few seconds, and another Darracq would probably have been at the top, or very near it, had it not been for a punctured tire on the first round. The Clément of Oury won in the voiturette class in 1:56:38, beating a Passy-Thellier by five minutes.

DIFFICULTIES IN WEIGHT LIMITATIONS.

In preparing cars for these races makers find such a difficulty in keeping the weights within the limit prescribed by the regulations that it is being suggested whether it would not be desirable to modify the rules so as to give them more latitude and enable them to present vehicles in a more complete form than is usual in the case of light carriages and voiturettes. In building racing vehicles the manufacturer of course pays more attention to his underframe and machinery, and having got this down to a weight limit consistent with safety he cuts away superfluous weight from the carriage body, with the result that the majority of racing light carriages and voiturettes have no body at all. The frame is simply boarded over and on this is placed a seat for the driver, while the mechanic hangs on as well as he can. The objections against this are twofold; first, because such a flimsy superstructure is liable to give way under shock or strain, as was the case in the Paris-Vienna race when one driver actually had his life saved through the seat breaking away as the vehicle was on the point of rolling over a precipice, and secondly, the appearance of these skeleton vehicles is not calculated to give the public a favorable impression of the esthetic side of the automobile. If racing is to do any good the vehicles must not only prove themselves to be fast and durable, but attractive as well, and if ugliness is to be the characteristic of the racing vehicle it is to be feared that the carriages built for speed tests will not do much to popularize the motor vehicle.

NEW RULES POSSIBLE.

Of course when the weight regulations were first adopted there was no suggestion that makers would sacrifice everything to their underframes and propelling machinery, and it is naturally impossible to prevent them from doing so because there is no means of saying what the maker must put on his frame unless he is required to fully equip it as a touring car, which would probably be carrying the desire for appearances a little too far. In order to overcome this difficulty it is suggested either that the weight limit of light carriages and voiturettes should be raised or that the frames and machinery should be weighed without the carriage body, and it is this latter alternative which will shortly be brought to the consideration of the Automobile Club. If the frame and machinery are alone weighed the maker will be able to fit carriage bodies which will give to his cars a more complete and attractive appearance, at the same time that it will be much safer for the drivers themselves whose lives will not depend, as they do at present, on the security of a couple of bolts. There is much to be said in favor of this reform but it is nevertheless likely to give rise to a good many side issues, not the least of them being the claim of makers of big vehicles to receive the same treatment, which will be equivalent to an all-round raising of the weight limit. The reform also means greater facilities for increasing powers, and whether this is desirable or not is another question.

DE DION'S LATEST MOVE.

The low priced popular car is beginning to insinuate its way into the market. All sorts of makers have been bringing out light vehicles of one type or another at a low figure in the hope of their being taken up by that large class of buyers who are in want of a "cheap automobile," but so far none of them have had much success, and now another effort is being made to fill the requirements by De Dion Bouton et Cie, who are producing a new type of six horsepower vehicle, capable of carrying four persons, which will be sold, I believe, at something like $700. De Dion et Bouton are, of course, the one firm who are able to turn out such a type of car. Their big plant enables them to produce very economically, and as the cars are of very simple construc-

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tion there are no costly processes in their manufacture. The firm have got a keen eye to the requirements of the public. Having produced low priced vehicles they are arranging, or rather they have already arranged, to have depots in all parts of the country where exchange pieces can be obtained at once wherever the automobilist may be, and as every part of the vehicle is made to gauge there is no difficulty in the owner or any country repairer doing what is necessary to the car.

Trouble With a Fine.

How easy it is to impose fines and how difficult to remit them even when those responsible for them become convinced that they erred was shown in Buffalo recently. A wrangle arose in the City Council regarding the proposition to remit the fines of $15 each imposed on George Bund and John J. Johnson, who were arrested a few weeks ago for scorching with automobiles.

A petition was presented to the Common Council asking that the fines be remitted, as the alleged offenders were engaged in testing an automobile for the E. R. Thomas Motor Co. at the time of their arrest, and, according to their story, were operating the machine on a thoroughfare where there were no other vehicles.

Justice Murphy, who imposed the fines, indorsed the petition, and the aldermen passed a resolution remitting the fines. When the matter reached the councilmen last week it was laid on the table, and Councilman Ash said that he had investigated and was convinced that the fines should not be remitted. Councilman Ladd thought otherwise, and so did Alderman Maischoss, who appeared before the board to speak for the petitioners. Various compromises were suggested and voted down, and finally the matter was laid on the table for another week.

Overreached and Underspeeded.

It is a satisfaction to know that at least one too zealous law making body has overreached itself. Under an ordinance recently passed by the Common Council of Binghamton, N. Y., the maximum speed permitted automobiles is seven miles per hour. It was passed in utter ignorance of the fact that there is a State law expressly prohibiting a reduction below eight miles an hour. Just before the Binghamton law went into effect the discovery was made that it conflicted with the law referred to, and now the former will have to be amended.

Under the statute known as the Doughty law the eight mile rule is plain. The clause relating to it is as follows:

"No ordinance, rule or regulation adopted by the authorities of any municipality in pursuance of this section or of any other law shall require an automobile or motor vehicle to travel at a slower rate of speed than eight miles per hour within any city, town or village of the State in the built up portions thereof, nor at a slower speed than fifteen miles per hour where the same are not built up."

The only way out of the quandary seems to be the raising of the limit from seven to eight miles per hour.

SPEED LIMIT REDUCED.

Fourteen Miles per Hour now Maximum Average Rate—New Marking Necessitated.

With the Reliability Run of the Automobile Club of America but one week off, and the arrangements rapidly nearing completion, interest in the event is steadily increasing.

The book of rules, which has gone to press, contains one important and several minor changes. The former consists in the substitution of fourteen miles as the maximum speed for the fifteen previously fixed upon. To obtain a first class certificate a car must average between twelve and fourteen miles for the six day's run, instead of between twelve and fifteen, as at first arranged. Similarly the four cups awarded to the cars making the highest number of marks will go to those vehicles making perfect records, or the nearest to it, fourteen miles being taken as the maximum speed instead of fifteen.

The change was made in order to avoid any possibility of violating speed laws in the different sections traversed. In many cities and towns the maximum speed permitted is 8 miles per hour; outside of these it is 15 miles in Connecticut and Massachusetts; while in the country districts of this State it is 20 miles.

To observe the 8 mile rules where they are in force and yet maintain an average speed of 15 miles for the entire journey, as would have had to be done to obtain the cups referred to, would have required a greater speed, in places, than 15 miles per hour. This would have been all right in New York outside of the cities and towns, but in Connecticut and Massachusetts it would have been in violation of the State statutes. Hence it was deemed advisable to make the change referred to in order to forestall any complaints that might be made.

Owing to this recasting of the speed, a change in the number of marks constituting a perfect record has been necessitated. The system remains the same, but the basis of computation is changed. Instead of obtaining the maximum number of marks for each day's run by multiplying the number of miles by 4—this being 4 minutes to the mile at the rate of 15 miles per hour—4.285 (minutes to the mile at 14 miles per hour) becomes the standard number. Under the old plan the maximum number of marks that a car could obtain for the entire run was 1,953.2, being four times the total number of miles. As finally decided upon, a car can obtain 2,293.332 marks, this, in turn, being 4.285 times the number of miles covered in the six days. From this total 1 mark will be deducted for every minute the car stops, unless the stop should be a non-penalized one.

On the first day's run the cars are to travel from New York to New Haven (seventy-five miles), and a non-stop trip will credit the operator with 321.375 marks, being 4.285 marks for each mile; second day, New Haven to Springfield (69.6 miles), to 411.36 marks; third day, Springfield to Boston (96.6 miles), 413.931 marks. The same points are to be credited on the return trip, making 2293.332 marks, a perfect score, entitling the operator and his car to a certificate. If his speed averages twelve to fourteen miles an hour he will receive a first class certificate; ten to twelve miles an hour, a second class certificate, and eight to ten miles an hour, a third class certificate.

In addition to the cup offered to the car earning the greatest number of marks, donated by President Shattuck, each of the three members of the Run Committee has offered a cup. That of W. E. Scarrett is for second prize, that of G. F. Chamberlain for third, and that of John A. Hill for fourth.

With Some Sense.

If there were more of the sort of legislator produced in Lawrenceville, N. J., the automobile speed problem would soon be in a fair way of settlement.

Although hailed as another anti-automobile law, the ordinance passed a few days ago by the township authorities has much to commend it. Under its provisions automobiles and motor cycles must not run at a higher rate of speed than twelve miles an hour, the rate of speed must be lessened at road crossings, and if horses become frightened the machine must be stopped; persons leaving such machines must see to it that precautions are taken to prevent accident; any one tampering with such machines will be arrested; lights must be shown one hour after sunset and one hour before sunrise—two white lights showing the direction which vehicle is proceeding and one red light in rear.

A penalty of not less than $10 and not more than $15 is provided.

Decision was Reserved.

The defendant's appeal in the case of the people against Harry S. Woodworth was argued before County Judge Sutherland at Rochester, N. Y., last week. Briefs were submitted and decision was reserved.

The defense is based principally on three contentions. The defendant argues that the prosecution failed to show that the automobile was operated by him; that it was a reversible error to allow witnesses to testify as to the defendant's coming, as well as his going, through the town of Brighton; that the prosecution failed to produce any testimony to dispute the defendant's evidence that it would have been impossible for the machine to have exceeded the speed limit when the lever was on the second notch.

Woodworth was convicted on May 27 of violating the speed law relative to the speed of automobiles. The case was tried before Peace Justice John Downs. A fine of $50 was imposed.

The Milwaukee Automobile Club is endeavoring to induce the State Fair authorities to run automobile races this year.

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VICTORIOUS AT HOME AND ABROAD.

The White Steam Carriage

WINS OUT IN ENGLAND'S RELIABILITY CONTEST.

True to its former showing made in this country, a WHITE STEAM CARRIAGE completed the 650 miles test with

AN ABSOLUTELY CLEAN RECORD,

being one of two out of seventy entries to achieve this distinction.



The conditions of this run were unusually severe, the competing vehicles being required to make five separate journeys over different routes, and submit to brake contests and hill climbing trials.

The WHITE STEAM CARRIAGE used was a six horse power vehicle taken from stock and not only scored

1800 POINTS OUT OF A POSSIBLE 1800,

but demonstrated its fuel economy by using only 13 quarts per day.

Both its track records for speed and its road records for reliability prove that

THE WHITE IS A THOROUGHBRED.

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NEW YORK, OCTOBER 2, 1902.

Situation Not Altered.

The fact that a State licensing scheme for automobiles has been officially indorsed by the Automobile Club of America and the National Association of Automobile Manufacturers does not alter the fact that it is class legislation and a gross discrimination against this type of vehicle.

A Matter of Assumption.

The full iniquity, the inherent viciousness, of the Cock's law, now on the statute books of this State, become more apparent the longer it remains in operation.

A more pernicious example of class legislation it would not be easy to find. It singles out motor vehicles and imposes on them restrictions that would be, if everywhere enforced, well nigh intolerable. Except here and there, however, no pretence is made of enforcing it. It remains a dead letter until such time as autophobes combine to persecute automobilists—the innocent along with the guilty—by insisting that its archaic provisions be lived up to.

Under it no automobile can be driven faster than eight miles an hour in the incorporated limits of any village or town, whether built up or not, unless an ordinance exists permitting a greater speed. None but motor vehicles are subjected to this stringent restriction. It is aimed at them, and them alone.

This law, which was passed last spring, conflicts directly with the much more moderate Doughty law, which became operative in 1901.

The latter provides that no ordinance shall be passed fixing the speed at less than eight miles an hour in the built-up portion of villages and towns, or fifteen miles an hour in the portions not built up.

As a matter of course, the prosecutions against automobilists are brought under the Cock's law, the Doughty being ignored entirely. The purposes desired are attained much easier in this way, and it is assumed, quite as a matter of course, that the Doughty law is superceded by the Cock's wherever the two conflict.

This view is contested by a number of eminent lawyers, and has never been passed on by a court. Until this is done automobilists will continue to be held at a disadvantage. It was at one time promised that a test of the matter would be made, but no steps looking to this end have ever been taken.

THE WEEK'S CASUALTIES.

RAILROADS:	Killed, 11. Injured, 24.
TROLLEYS:	Killed, 5. Injured, 45.
HORSES:	Killed, 4. Injured, 15.
BICYCLES:	Killed, 0. Injured, 1.

TOTAL: KILLED, 20; INJURED, 85.

An Instructive Comparison.

That the automobile is not alone in its death and injury dealing work, as one might suppose to listen to the outcry that is constantly being made, becomes plain upon reading the lengthy list of other accidents reproduced on another page.

They cover but a few days, and are selected without the exercise of any very great industry. For all that, they make a grisly exhibit, one that is not pleasant to dwell upon. But they tell a tale as it could be told in no other way, a fact that is ample cause for reproducing them.

Compared with them the list of automobile accidents almost shrinks into insignificance.

It should be remembered, too, that while the latter are intermittent, magnified and frequently distorted, the former go on day after day, month after month, and year after year. It is a tale of horror that never ends, and is being steadily augmented and must be continued to be for all human time.

Nor is the half, nor even the quarter, told. The tally of railroad accidents would, if made public in all its hideous and merciless accuracy, "stagger humanity." But it is not told and need not be.

All this is one of the penalties we pay for the highly complex life we moderns live.

Most of it is unavoidable, and, therefore, rightly minimized. No real necessity exists for racking tender hearts with the dismal disclosures, and ordinarily we draw the veil over them and see as little of them as possible.

Such an attitude will prevail regarding automobile accidents. The railroad train, the trolley car, the bicycle—all went through the same experience, and when people became accustomed to them, or tired of them, the sensational stories ceased to interest, and then ceased to be told.

Will Cause Much Inconvenience.

Sound as is the reasoning which dictated the change in the maximum average speed rate in the Reliability Run from 15 to 14 miles, it is certain to cause considerable inconvenience to both drivers and observers.

In consequence of this change the former simple method of calculating the time which should be consumed in covering the daily runs is rendered out of the question. Instead of being able to arrive at the desired figures by simply saying "4 times 40 are 160," it will be necessary to take out a pencil and multiply 40 by 4.285. As the number of miles becomes greater the difficulty will increase proportionately.

The labor of calculating the average times will also be enormously increased.

One Way to Make an Impression.

If more automobilists would show themselves considerate of the feelings, as well as the rights, of other users of the road there would be much less bitterness against them than is now being exhibited.

Much depends on the circumstances, of

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course, and one cannot be expected to be constantly catering to the whims of timid or fussy drivers. But, on the other hand, it is not absolutely necesessary to go about with a chip on one's shoulder, with the air of defying people to assail one's rights. Of the two ways it is infinitely better to err on the former side.

An example of the better way to manage these things was witnessed last week on a quiet road in one of Boston's suburbs.

A gasolene car, big and noisy, with a well filled tonneau body, was bowling along at a moderate pace, when a carriage coming in the opposite direction was encountered. In the latter was an elderly woman, who was driving, and a couple of children.

The horse was a sedate nag, and beyond raising its head and taking a look at the strange vehicle approaching him paid no attention to it.

But its driver was not so easily pacified. Visions of a runaway seemed to appear before her, and she waved her hands frantically as a signal to stop. The automobile could have gone by without further incident than a violent agitation of the elderly female's mind. But the chauffeur took a more graceful course. He threw his clutch out and brought the car to a sudden stop. Then he sprang out and took the horse by the head and led him past the throbbing vehicle. Without waiting for thanks, he got into his seat again and drove off.

Unnecessary his action may have been. But it was graceful, and it is long odds that the recipient of the courtesy willl have a better opinion of automobilists than if her ill founded fears had been ignored entirely.

The British Trials.

In no way could the wonderful advance in the matter of reliability which the motor cars of to-day have made be better shown than in the result of the British tests of last month.

Of the 54 starters, 45 vehicles finished. Of these 11 made a rather poor showing and count for little in supporting the contention advanced above. But the remainder, being just short of two-thirds of the whole, may fairly be said to have covered themselves with glory.

Of the 34 cars referred to only two made absolutely perfect records—one of our own Whites and a Wolseley. Thus the two countries, which are commonly credited with being behind in the matter of automobile design and construction, viz, America and Great Britain—really make a much better showing than their rivals, France and Germany. This is all the more remarkable in view of the fact that one Panhard and two Daimler cars were among the contestants.

No less than 15 of the cars have charged against them a smaller number of marks than 10.

The significance of this will be seen when it is remembered that under the system of scoring employed one bad mark was given for each minute, or fraction thereof, of unpenalized stops made by the cars. The highest number of marks scored against any one of these 15 cars was 9, which may have been for one stop or for nine. This result was the lapse from perfection of cars competing for six successive days, over 650 miles of different roads, and while constantly under the closeht possible scrutiny.

Six more of the 34 cars referred to had less than 20 marks scored against them. Of the remainder only four were charged with 50 marks or more.

Turning to the stops which caused the scoring of the bad marks, it is found that many of them are of a trivial character, while others are due to errors of judgment or miscalculation on the part of the drivers.

Three of the cars were particularly unfortunate, all of them coming within one mark of a perfect record.

One of these, a Peugeot, was accidentally stopped by the driver, there being absolutely nothing the matter with the vehicle or its engine. A Panhard had to change an accumulator, and thus earned its single bad mark. A De Dion car was punished to the same extent by reason of a terminal wire snapping.

Enough has been said to show that the cars as a whole demonstrated their ability to cover a week's run without giving any trouble worth speaking of.

Even a year ago, when the run was from Glasgow to London, the tale was a very different one, and yet it was considered to mark a considerable advance in efficiency.

It is interesting to learn that the newly organized Long Island Highway Protective Society does not propose to wage an indiscriminate warfare on automobiles. On the contrary, its incorporators "believe that a majority of those who have these vehicles will sympatahize with them, and they expect that many of them will become members of the society."

It would be quite as interesting to know just what the association is doing to safeguard the highways where scorching horsemen and wheelmen are concerned. So far their activity has been confined entirely to automobilists. Yet it will scarcely be contended that they are the only violators of the ordinances relating to speed. Nevertheless we have yet to hear of the slightest attention being paid to any one else on the North Shore roads.

In the reliability run, which starts next week, the contesting vehicles alone will cover somewhere near 35,000 miles in their journey to Boston and return. Probably an equal distance will be driven by other vehicles which accompany the tourists or go to meet them and escort them into the towns en route. To make the run the competing vehicles must consume somewhere in the neighborhood of 3,500 gallons of gasolene.

It is refreshing to learn that there is one place in the world where there is no legal speed limit for automobiles. It is the Emerald Isle which bears this proud distinction, and although the Irish roads are none of the best, that country is still being strongly pressed as the best course for the 1903 Bennett Cup races.

It is no longer necessary to "seek the bubble reputation at the cannon's mouth." All the seeker after fame or notoriety has to do is to propose a new and more restrictive ordinance relating to their use of the highways, or to invent some new way of harassing them. Immediately his object is achieved.

The Automobile Club of Great Britain and Ireland is without a set of racing rules. It is suggested that an international conference between race promoting bodies, to agree on uniform rules, would be a good thing. There is need of something of the sort.

The politician will no longer make cart tail speeches during the coming campaign. He will stand on the tailboard—if he can find it—of an automobile and let eloquence flow.

There are cycle paths, speedways for horses and bridle paths—but the automobilist knows not where he can speed his machine unless he wants to get arrested.

"Bounders on boilers" is the alliterative way in which an indignant Briton characterizes automobilists.

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Commentaries

Wonder why it is that Providence, R. I., comes nearer than any other city to making the automobile a real competitor of the horse in their contest for society favor? Be the cause what it may, the fact remains that the very best people in Rhode Island's capital are either automobilists themselves, or, at least, friendly disposed toward the motor vehicle, and hence it is that the Providence race meets are quite as successful socially as they are from financial and sporting points of view. Considering the many efforts which have been made to induce society with a big S to bestow upon the automobile some of the public favor it lavishes upon the horse, it is really remarkable that so little success has been met with. In fact, outside of Providence it might almost be said that the effort to win society favor for automobile events has been practically a failure, and yet at the same time all those who are foremost in the smart set own, use and like automobiles. That America should in this instance positively refuse to endorse the action of foreign royalty and aristocracy makes the whole thing even more perplexing. Certainly no one can say that the automobile abroad is not accorded as much social favor as the horse, if it does not receive even more than the animal. It certainly, however, is not so in this country just now, though it may be in the future, since we seldom allow the foreign fashion setters to get entirely out of our initiative range.

* * *

Since the beginning of automobiling in this country a small, pestiferous, but boisterous, clique of calamity howlers has done what it could to promulgate an anti-cyclist feeling among the users of automobiles. That these efforts of the pestiferous ones have not been more successful was due entirely to the good sense of those they sought to influence and to the total lack of influence possessed by the calamityites. Through all of it the wheelmen gave no just cause for any but the friendliest feelings on the part of the automobilist, but the cyclists were no more free from the pestiferous element than were the automobilists, and so it came to pass that one of these creatures has, without either cause or judgment, appeared before the Board of Aldermen with an ordinance to license automobilists. Most unfortunate is this attack from a quarter which the users of automobiles had every reason to think only aid and support would come. The trouble causers, who have all along tried to embitter the motor vehicle people against the cycling ones, have not been slow to seize upon this as proof that all they have said against the wheelmen was true. I am glad to see that you took occasion editorially to place the affair in its true light. The average wheelman, like his brother of the bigger vehicle, is a progressive, intelligent individual, whose sympathies are all with the motor vehicle in its struggle for justice, and it is therefore very much to be regretted that the cyclists should be called upon to suffer by the ill advised, selfish action of one of their number, who in his selfishness represented no one but himself. The case can be put in this fashion:

* * *

You can sometimes dodge the lion who selects you as his prey;
You can even catch and cage him and observe him at his play;
The wolf and the hyena are uncanny to the view,
But they leave you unmolested if you know a thing or two.
But there's one terrific creature we encounter now and then,
Who defies all calculations to protect his fellow men;
He balks our fondest purpose, and he plays the very deuce;
There is nothing that can stop him when the fool breaks loose.
To reason he will turn a dull and unresponsive ear;
He hasn't wit enough to entertain a sense of fear;
He plunges to destruction; never stops for looking back,
And laughs when wiser people are obliged to clear the track.
For years he may be dormant, then he wakes to sudden joy,
And thinks earth was created for his own especial toy.
You may sometimes try to save him, but it isn't any use,
You must simply wait and tremble, when the fool breaks loose.

* * *

Thirty or more years ago the people of the North went South to emancipate the negro; at the conclusion of a visit, which was prolonged very much in excess of the time set for its termination by the visitors, the negro was free, and the South had very little left but mules, and mighty few of them. Now the North is again invading the South; this time her mission is to emancipate the mules through supplanting them with motors. The latest invasion promises to be almost as successful as the first, even if it be less strenuous and pension provoking than was the visit of three decades ago.

* * *

From present indications those who take part in the Reliability Run will not be troubled much with dust. Rain has fallen almost for a month now and the roads of New-England must be in pretty fair shape, at least they should not be as dusty as they usually are. While moisture may thus rob the New England highways of some of their dusty terrors the assorted samples of Plymouth rock and other rocks not Plymouth which decorate many of the Connecticut and Massachusetts roadways will all be found in business at the old stand working overtime to make their presence known to the reliabilities. But, even so, the course of the run this year is a vast improvement over the one chosen last year, for which there is much to be thankful.

* * *

Of course, I know it is perfectly useless just at this time to ask the press or the public to admit that the "deadly automobile" is not always so from the callousness or carelessness of its driver. There are two sides even to this automobile allegement, however, and so not infrequently the accidents which occur wherein a motor vehicle and a pedestrian figure prominently the real cause of all the trouble is the careless traveller on foot, who walks, runs or jumps—according to age, sex or condition—right in front of a vehicle trusting to life saving purposes to Providence and the police. No one who has not been responsible for the driving and directing of a rapid-moving vehicle has any idea of how careless and foolhardy the average pedestrian can be and is. An expert photographer was talking to me recently about this very thing. He told me that for his own protection he intended placing a camera on the dashboard of his runabout disguised as a lamp, then, when the foolish or the foolhardy are about to suffer from their lack of attention to where they are going or how, he will only have to press a button with his foot and by doing so secure photographic proof of the cause of any accident which may occur and of which he might be accused of causing. I'd like to have a set of such photographs, because I'm sure that whatever else they might be mistaken for any one could see at first glance that they were not studies of still life.

* * *

In an English paper published in the interests of the human butcher business, that is to say, surgery, I was grieved to read recently that those who are responsible for the steering of automobiles on long or speedmaking trips are very likely to experience "paraesthesia in the fourth and fifth fingers, with impaired sensibility, and paresis in the interossal lumbicals and the adductor pollicis." You or I, not being in the butcher trade, would say that a long continued grasp of the steering wheel made the hand numb, provided we mentioned the matter at all.

* * *

While the foregoing was bad enough a bit further along in the same interesting periodical I read that in addition to the danger the motor vehicist's lumbicals and pollicis were subject to if he persisted in using an automobile, he was liable to I don't know what from "inhalation of extraordinary quantities of exceous and calcareous substances cooperating with spicules of tritulated venetationer." After that I made up my mind I either had to give up all ideas of automobiling or else quit reading English surgical papers; so I promptly availed myself of the last named alternative, and henceforth I'll confine my literary browsings to literary fields wherein less deadly information abounds.

THE COMMENTATOR.

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One Week's Casualties Not Caused by Automobiles.

DUE TO RAILROADS: { Killed, 11. Injured, 24. **TROLLEYS: { Killed, 5. Injured, 45.** **HORSES: { Killed, 4. Injured, 15.** **BICYCLES: { Killed, 0. Injured, 1.**

TOTAL: KILLED, 20; INJURED, 85.

At the moment there is an urgent and apparently a general demand for the licensing of automobiles. Many automobile users and well wishers indorse it.

No other vehicles, save those of a public nature, kept for hire, are licensed. Experience has shown that there is no necessity for a measure of the kind. The evils and abuses consequent upon the use of such vehicles are not too great for the duly constituted authorities to cope with.

But, it is urged, the automobile is in a class by itself. It gets into the hands of reckless or inexperienced persons and accidents result that shock the community and make absolutely necessary some restrictive measures.

That accidents happen, caused by other vehicles, is at least hinted at by the accompanying list. It is taken from the newspapers, those same journals which give a small head and from two to six lines to the killing of a child run over by a truck, and a triple head and well nigh a column to the latest automobile accident, whether it be of a serious character or not.

September 25.

Amelia, Va.—E. G. Drake was ground to death under a railroad train; suicide is suspected.

Fort Dodge, Ia.—Jerry Begley, while drunk, was run over by a train and killed, together with his team of two horses.

Port Jervis, N. Y.—William Feeley was run over by a railroad train; died from his injuries.

Spring City, Tenn.—J. M. Cox was run over by a freight train and instantly killed.

Richmond, Va.—William Moore was run over by a railroad train; killed.

Mayville, N. D.—Andrew Hanson was run over by a railroad train; killed.

Columbus, O.—Clayton Creachbaum was run over by a shifting train; killed.

September 26.

Oneida, N. Y.—Pearl Bates was thrown from his bicycle and badly cut about the head.

Plattsburg, N. Y.—Arthur Wray was thrown from a wagon owing to the horses becoming frightened by the load coming loose; leg broken in two places.

St. Louis, Mo.—Charles G. Woods, wife and child, trampled on by runaway horse; badly bruised.

Wapakoneta, O.—Thomas Ramsay, struck by trolley car while driving; unconscious and seriously injured; died subsequently.

Buffalo, N. Y.—Mrs. Minnie Spears, fell from trolley car; severely cut and bruised.

Buffalo, N. Y.—John Barone, fell from trolley car; scalp wound.

Hartford, Conn.—George H. Rogers, fell from trolley car; right leg broken.

Pittsburg, Pa.—James Perkins, 10 years od, struck by trolley car; died from injuries.

Milwaukee, Wis.—J. Kelley, driver, struck by trolley car; injured.

Pittsburg, Pa.—Mrs. Rachel Black, struck by glass in trolley car collision; cut about head and hands.

Pittsburg, Pa.—Trolley car got beyond control and struck a teamster and injured a number of passengers.

Rawlins, Wyo.—Freight train wrecked and six men buried under debris.

Washington, Ind.—Work train wrecked and six men dangerously injured.

Wequetequock, R. I.—Brakeman struck by overhead bridge and skull fractured; died from injury.

September 27.

New York—Della Fineberry, aged 3 years, run over by heavy truck; killed.

New York—Henry Harrington, truckman, kicked into a "dump" by balky horse; leg broken.

Brooklyn, N. Y.—Vander Kompad, jumped from an ice wagon; leg broken.

Newark, N. J.—Emma Blum, knocked down by coal wagon; considerably hurt.

Leesburg, Va.—B. Cooper, 14 years old, thrown by horse he was riding to market; killed.

New York—Gus Wilson, knocked down by runaway horse; left shoulder dislocated and severe scalp wounds.

Delton, Wis.—Thomas Scott, finger of right hand bitten off by horse he was feeding; will have to be amputated.

Providence, R. I.—Henry Repel, driver, kicked by horse; hemorrhage of eye caused, with probability of losing sight, and leg badly bruised and cut.

Brookln, N. Y.—Charles Morris, conductor, fell from trolley car; skull factured.

Pittsfield, Mass.—Trolley car struck carriage containing four men and injured all.

Wilmington, Mass.—Two trolley cars collided and injured both motormen and two passengers.

Tewksbury, Mass.—Two trolley cars collided and injured four passengers and both motormen, one fatally.

September 28.

Stamford, Conn.—Wm. I. Toepher, thrown by fractious horse; skull fractured, causing death.

September 29.

Newark, N. J.—John Reilly, knocked down by trolley car.

Brooklyn, N. Y.—Two trolley cars collided, bruising a passenger and internally injuring a conductor.

Brooklyn, N. Y.—Trolley car struck two vehicles, injuring both drivers.

September 29.

St. Louis, Mo.—Mrs. J. W. Ashton and little daughter were thrown from a trolley car by defective gate. Mrs. Aston's hip was crushed and head bruised, and the child's arm was broken and it was injured internally.

Paris, Ont.—Mrs. Allen Edgar and Miss Agnes Gourley were struck by railroad train and killed.

Detroit, Mich.—Frank J. Schraffan, driver of a brewery wagon, was fatally injured by his runaway team.

Detroit, Mich.—George Grosshaus fell from trolley car; killed.

Brooklyn, N. Y.—Michael McMahon fell while trying to board a trolley car; arm injured and scalp cut.

September 30.

Elizabeth, N. J.—E. J. Melville, struck by trolley car and killed.

Taunton, Mass.—Eleven passengers were injured by a trolley car collision; none of them seriously.

Chicago, Ill.—One man killed and another injured in a freight train wreck on the B. & O. road.

Highland Falls, N. Y.—Major-General C. F. Roe was thrown from his horse and badly cut about the head.

Irvington, N. J.—Thomas E. Brown was run over by a trolley car and both his legs crushed.

Changes in Manufacturers Ass'n.

Owing to the resignations of A. L. Riker and Dane E. Rianhard, first and second vice-presidents, respectively, of the National Association of Automobile Manufacturers, a number of changes have been made, the following new officers being elected: H. Ward Leonard, first vice-president; F. M. Lande, second vice-president; Charles Clifton, third vice-president; Harry Unwin, secretary, and Windsor T. White, member of executive committee.

Will Banquet Tourists.

Taking advantage of the fact that the second all night stop of the participants in the reliability run will be made at Springfield, Mass., the Knox Automobile Co. have arranged to entertain the visitors. The company will tender a banquet to the officials, chauffeurs, observers, reporters and others, to be given at the Cooley Hotel, Friday evening, October 10. It is expected that 200 guests will be present.

Ball Plant in Meriden.

Negotiations have been practically concluded, according to press dispatches from Meriden, Conn., whereby the German-American Steel Ball Co. will purchase the plant of the Meriden Malleable Iron Co., of Meriden. The ball concern is capitalized at $1,000,000, and it will manufacture steel balls for ball bearings under German patents. Officers state that within a year they expect to employ at least 1,000 hands.

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Details of Entries in the A. C. A. Reliability Contest.

Belated entries received to date make the list of contestants in the Reliability Run to Boston and return, starting October 9, seventy-eight, an increase of thirty-one since last week.

The number is slightly smaller than the entry list for the Buffalo run last year. The latter had 86 entrants and 75 starters. The number of experimental cars in the present list, however, is considerably less than it was a year ago, and the number of finishers is likely to be correspondingly larger. Better roads and, in all probability, better weather conditions will prevail in the present run.

Below will be found a table giving many of the constructional details of the cars entered, as called for by the entry blanks. They make an interesting study. More than anything else, they tell the story of the present trend of design and reveal some conditions that are surprising.

As has always been the case, the gasolene type of car has a large lead. No less than 59 vehicles come under this head, as against 18 steam and 1 electric. Of the three classes provided, divided according to weight, the medium weight cars comprise a majority of the whole. Class A, under 1,000 lbs., has 13 entries; Class B, between 1,000 and 2,000, has 45, and Class C has 20.

The horse powers in Class A ranges from 4 to 6, the first mentioned figure being the favorite. In Class B the range of claimed horse power is from 4 to 16. Not all of Class C are high-powered cars. The lowest is 8 H. P., while the maximum is 24.

The tire statistics also reveal some interesting facts. The double tube type has a big lead, there being 52 cars fitted with them, and only 24 having single tubes. But one car, the Neftel electric, is shod with solid tires.

The complete table follows:

No. Official.	Manufacturer.	Entrant.	Number of passengers vehicle can carry.	Type of motor—gasolene, steam or electric.	Weight, including fuel, supplies and equipment.	Capacity.		Tires.				Engine.	
						Water. Gals.	Gasolene. Gals.	Make.	Size.	Weight per tire.	Double or S. tube.	Rated H. P.	No. of Cyl.
CLASS A—UNDER 1,000 POUNDS.													
19	Torbensen Gear, Inc.	Torbensen Gear, Inc.	2	Gaso.	875	2.5	6	Dunlop	30x3	—	D.	5	1
20	George N. Pierce Co.	George N. Pierce Co.	2	Gaso.	800	6	5	G. & J.	28x3	12	D.	4½	1
22	Foster Auto Manufacturing Co.	Foster Auto Mfg. Co.	2	Gaso.	850	5	5	Diamond	28x3	14	S.	8	2
35	Locomobile Co. of America	Locomobile Co. of Am.	2	Steam	985	36	12	Diamond	28x2½	9	S.	4	2
36	Locomobile Co. of America	Locomobile Co. of Am.	2	Steam	985	36	12	Diamond	28x2½	9	S.	4	2
41	Olds Motor Works	H. B. Shattuck & Son.	2	Gaso.	800	4	4	Fisk	28x2½	—	S.	4	1
54	De Dion-Bouton Motorette Co.	Dr. Julius F. Hovestadt.	3	Gaso.	950	5.5	6.5	Dunlop	28x3	12	D.	6	1
57	George N. Pierce Co.	George N. Pierce Co.	2	Gaso.	800	6	5.5	G. & J.	28x3	12	D.	5	1
58	Thos. B. Jeffery Co.	Henry C. Squires & Son	2	Gaso.	900	3	3.5	Diamond	30x2½	—	S.	4	1
63	Olds Motor Works	Oldsmobile Co.	2	Gaso.	800	3	4	Goodrich	28x2½	—	D.	4	1
64	Olds Motor Works	Oldsmobile Co.	2	Gaso.	800	3	4	Goodrich	28x2½	—	D.	4	1
71	De Dion-Bouton Co.	Kenneth A. Skinner.	3	Gaso.	900	3	6	Michelin	28x3½	12	D.	6	1
74	E. R. Thomas Motor Co.	Mechaley Bros.	2	Gaso.	935	4	5.5	International	—	—	S.	6	1
CLASS B—1,000 TO 2,000 POUNDS.													
5	Prescott Auto Manufacturing Co	Prescott Auto Mfg. Co.	2	Steam	1,350	33	9¼	Fisk	28x2½	11	S.	4½	2
6	Foster Auto Manufacturing Co.	Foster Auto Mfg. Co.	2	Steam	1,200	35	13	Diamond	34x2½	—	S.	4	2
7	Lane Motor Vehicle Co.	Lane Motor Veh. Co.	2	Steam	1,800	38	12	Hartford	34x3	16	S.	9	2
8	Lane Motor Vehicle Co.	Lane Motor Veh. Co.	2	Steam	1,650	25	8	Hartford	34x3	16	S.	9	2
10	Haynes-Apperson Co.	Haynes-Apperson Co.	4	Gaso.	1,975	10	11.7	Goodrich	36x4	25	D.	9	2
11	Haynes-Apperson Co.	Haynes-Apperson Co.	2	Gaso.	1,900	10	7.4	Goodrich	36x3½	16	D.	9	2
12	Haynes-Apperson Co.	Haynes-Apperson Co.	2	Gaso.	1,300	6	6.7	International	32x3	24	S.	6	2
13	Autocar Co.	Autocar Co.	2	Gaso.	1,350	6	10	G. & J.	—x3	14	D.	10	2
14	Autocar Co.	Autocar Co.	4	Gaso.	1,450	6	10	G. & J.	—x3	14	D.	10	2
15	Ward-Leonard Electric Co.	Ward-Leonard Elec. Co.	4	Gaso.	1,550	7	9	G. & J.	—x3	14	D.	10	1
16	Ward-Leonard Electric Co.	Ward-Leonard Elec. Co.	4	Gaso.	1,800	8.5	15	G. & J.	—x3½	14	D.	15	2
21	A. Darracq & Cie.	Harold H. Brown.	4	Gaso.	1,600	6	5	Michelin	30x3½	16	D.	12	2
24	White Sewing Machine Co.	White Sew. Mach. Co.	2	Steam	1,450	20	8	Goodrich	30x3½	16¼	D.	6	2
25	White Sewing Machine Co.	White Sew. Mach. Co.	2	Steam	1,450	20	8	Goodrich	30x3½	16¼	D.	6	2
26	White Sewing Machine Co.	White Sew. Mach. Co.	2	Steam	1,450	20	8	Goodrich	30x3½	16¼	D.	6	2
27	†White Sewing Machine Co.	White Sew. Mach. Co.	2	Steam	1,600	20	8	Goodrich	30x3½	16¼	D.	6	2
28	†White Sewing Machine Co.	White Sew. Mach. Co.	2	Steam	1,600	20	8	Goodrich	30x3½	16¼	D.	6	2
30	J. Stevens Arms & Tool Co.	J. Stevens A. & T. Co.	2	Gaso.	1,650	5	6	Dunlop	28x3	13	D.	6	2
31	J. Stevens Arms & Tool Co.	J. Stevens A. & T. Co.	2	Gaso.	1,050	5	6	G. & J.	28x3	13	D.	6	2
32	Thos. B. Jeffery Co.	Thos. B. Jeffery Co.	2	Gaso.	1,200	3.75	6	G. & J.	28x3	11¾	D.	6	1
33	Grout Bros.	Grout Bros.	2	Steam	1,300	37	7	Diamond	30x2½	12	S.	6½	2
37	Elmore Manufacturing Co.	Elmore Mfg. Co.	2	Gaso.	1,080	6	7	Diamond	28x3	15½	S.	5	2
38	Elmore Manufacturing Co.	Elmore Mfg. Co.	2	Gaso.	1,080	6	7	Diamond	28x3	15½	S.	5	2
39	De Dion-Bouton Co.	Kenneth A. Skinner.	4	Gaso.	1,200	5	6.5	Michelin	30x3	—	D.	8	1
40	Autocar Co.	H. B. Shattuck & Son.	4	Gaso.	1,350	5	10	Dunlop	30x3	—	D.	10	2
44	A. Darracq & Cie.	F. A. La Roche.	3	Gaso.	1,700	6	15	Michelin	30x3	16	D.	16	2
45	H. H. Franklin Co.	S. G. Averill.	2	Gaso	1,125	None.	7.5	Goodyear	30x3	—	D.	8	4
46	Knox Automobile Co.	Knox Automobile Co.	2	Gaso.	1,400	None.	8	Dunlop	30x3	—	D.	8	1
47	Knox Automobile Co.	Knox Automobile Co.	2	Gaso.	1,400	None.	8	Dunlop	30x3	—	D.	8	1
48	Knox Automobile Co.	Knox Automobile Co.	2	Gaso.	1,400	None.	8	Dunlop	30x3	—	D.	8	1
49	Fiat-Torino, Italy.	C. H. Tangeman.	5	Gaso.	1,950	5	8.5	Continental	34x3½	—	D.	12	4
51	Stearns Steam Carriage Co.	Stearns Steam Car Co.	2	Steam	1,500	30	15	Fisk	28x3	12½	S.	8	2
55	U. S. Long Distance Auto Co.	U. S. Long Dis. A. Co.	2	Gaso.	1,600	4	4.5	Goodrich	30x3	14	D.	7	1
56	U. S. Long Distance Auto Co.	U. S. Long Dis. A. Co.	2	Gaso.	1,600	4	4.5	Goodrich	30x3	14	D.	7	1
60	Grout Bros.	Grout Bros.	2	Steam	1,300	37	7	Diamond	28 & 30	12	S.	6½	2
61	Grout Bros.	Grout Bros.	2	Steam	1,300	37	7	Diamond	x2½	12	S.	6½	2
65	Automotor Co.	Automotor Co.	4	Gaso.	1,669	7	8.5	Diamond	30x3½	18	D.	12	2
68	Fredonia Manufacturing Co.	Fredonia Mfg. Co.	2	Gaso.	1,300	5	8	Goodrich	—x3	20	D.	9	1
69	Fredonia Manufacturing Co.	Fredonia Mfg. Co.	2	Gaso.	1,300	5	8	Goodrich	—x3	20	D.	9	1
70	Foster Auto Manufacturing Co.	Foster Auto Mfg. Co.	2	Steam	1,300	35	13	Diamond	30x3	—	S.	4	2
72	†Georges Richard.	Manhattan Transit Co.	4	Gaso.	1,400	5	6	Michelin	30x3	—	D.	10	2
73	Foster Auto Manufacturing Co.	Dr. M. A. Carman.	4	Steam	1,350	35	13	Diamond	30x3	—	S.	4	2
75	Thos. B. Jeffery Co.	Mechaley Bros.	2	Gaso.	1,100	4	4	Diamond	30x3	—	S.	4½	1
77	Thos. B. Jeffery Co.	Columbus Auto. Exch'ge	2	Gaso.	1,100	4	4	Diamond	30x3	—	S.	4½	1
78	A. Darracq.	W. P. Harnow.	3	Gaso.	1,700	6	15	Michelin	30x3	16	D.	16	2

†Delivery Wagon.

CLASS C—MORE THAN 2,000 POUNDS.													
1	Ohio Automobile Co.	Harlan W. Whipple.	7	Gaso.	2,000	5	20	Goodrich	36x5	—	D.	24	2
2	Ohio Automobile Co.	Henry B. Joy.	4	Gaso.	2,100	4	12	Diamond	34x4	—	S.	12	1
3	Ohio Automobile Co.	Adams & McMurtry Co.	4	Gaso.	2,100	4	12	Diamond	34x4	—	S.	12	1
4	Ohio Automobile Co.	Adams & McMurtry Co.	4	Gaso.	2,100	4	12	———	———	—	—	12	1
9	Pope-Robinson Co.	Pope-Robinson Co.	4	Gaso.	3,000	7	15	Goodrich	34x4	21¾	D.	24	4
17	Apperson Bros.	Apperson Bros.	4	Gaso.	2,500	8	12	Goodrich	36x4	21	D.	16	2
18	H. Bartol Brazier.	H. Bartol Brazier.	4	Gaso.	2,760	9.75	14	Goodrich	36x4	27	D.	15	2
23	Apperson Bros.	H. K. Browning.	6	Gaso.	2,600	10	15	Goodrich	36x4	21	D.	16	2
29	Locomobile Co. of America.	A. L. Riker.	4	Gaso.	2,200	7.5	15	Goodrich	34x3½	15	D.	12	4
34	Locomobile Co. of America.	S. T. Davis, Jr.	2	Steam	2,400	50	20	Goodrich	28x3½	10	D.	10	2
42	Fournier-Searchment Co.	H. B. Shattuck & Son.	4	Gaso.	2,200	12	10	Dunlop	32x3½	20	D.	8	2
43	Ohio Automobile Co.	H. B. Shattuck & Son.	4	Gaso.	2,000	6	10	Diamond	34x4	—	S.	12	1
50	Neftel Automobile Co.	Knight Neftel.	4	Elec.	3,500	*	*	Goodyear	36x3½	—	Solid	—	—
52	Winton Motor Carriage Co.	Percy Owen.	4	Gaso.	2,150	8	10	Goodrich	32x4	—	D.	15	2
53	Electric Vehicle Co.	Electric Vehicle Co.	4	Gaso.	2,500	6	18	Dunlop	32x3½	15	D.	10	2
59	Winton Motor Carriage Co.	C. E. Proctor.	4	Gaso.	2,300	10	11	Goodrich	32x4	30	D.	16	2
62	International Motor Car Co.	International M. C. Co.	4	Gaso.	2,600	14	16	G. & J.	32x4	25	D.	16	3
66	Panhard-Levassor	Leonard D. Fisk.	4	Gaso.	2,800	—	—	Michelin	30x3½	—	D.	12	4
67	Fournier-Searchment	John Wanamaker.	4	Gaso.	2,100	10	10	Dunlop	32x3½	20	D.	8	2
76	Fournier-Searchment	John Wanamaker.	4	Gaso.	2,100	10	10	Dunlop	32x3½	20	D.	8	2

* * Carries 8½ h. p. gasolene motor and dynamo to recharge battery en route.

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BRITISH TRIAL LESSONS

Great Improvement Shown by Contesting Cars —Native Products Praised by Sturmey.

"The trials are over, and it must be admitted they have been a considerable success, and that the lessons of former trials have not been neglected," says Henry Sturmey in the "Autocar." "In this connection I may incidentally mention that, although I was informed that the committee could not see their way to adopt the suggestions I made in these columns on July 5th, with two exceptions—the method of marking for horse-power and the freedom to change sparking plugs without penalization—they all were adopted, and I cannot help thinking with benefit to the trials.

"At the last moment the committee sought a means of evening the pace and preventing the alternate racing and crawling of the Glasgow gathering, and it must be admitted the method adopted met with a very considerable measure of success, the several stages being divided into a series of sub-stages, each of which had its own time period, and the treble duty was placed upon the observers of assisting the driver's judgment in checking the pace and deducting marks for exceeding the maximum allowable.

"So far as I was able to see this answered very fairly well, but I would suggest that another year the duties of the observers should end at recording the actual times of completion of the different sub-stages, leaving the actual mark deductions to be made by the judges. This in the interests of uniformity and strict fairness, because I found by conversation with some observers that very different constructions were placed upon their instructions upon this point; some observers, for instance, being severely accurate to seconds, whereas others considered that 'half minutes did not count.' Others, again, because no marks were to be deducted for error on the first three sub-stages of any stage, considered that the first three sub-stages 'didn't count,' and virtually allowed free running thereupon, whilst their fellows were—as they should have been—as strict and accurate on these as upon the rest.

"The arrangement generally, however, worked well, and although crawling tactics were occasionally resorted to, it was rather the result of speed miscalculation, or a failure on the part of the observer to see or to recognize the landmarks forming the boundaries of the stages, than to any intentional exceeding of the speed limits at any part of the stage, and the system generally is to be commended for future use. Whether it was due in any degree to this efficient keeping down of speed, or rather to the generally improved efficiency of car construction, is uncertain; but to those who had previously gone through the thousand miles and the Glasgow trials the paucity of 'incident' in the nature of stranded and temporarily disabled cars was most striking. Although during the trials eight cars experienced sufficiently serious breakages to put them out of the running, they were the exceptions which proved the rule, and of cars which were literally dragged through by the pluck and tenacity of their drivers in dealing with serious derangements from day to day there were none, although instances of such were fairly numerous in former trials.

"For the most part the cars ran through their daily runs without need for adjustment of any kind, and where stoppages were recorded they were generally due to quite minor and readily dealt with causes. Curiously enough, most of the tire troubles seemed to affect those vehicles wearing tires specially entered for the tire trials, and the advance made in the commercial article, as exemplified by their performances in the trials, can only be characterized as remarkable. I had seats on four different cars during the week, and in no single instance was a puncture experienced, or inflation necessary, and I believe I am correct in stating that each of the four vehicles went through the whole of the 650 miles with no more trouble from their tires than during the days I was upon them. In this connection it would be interesting to know the exact total of stops for tire trouble and the nature of the trouble, and if this were compared with the 40,000 or thereabout car miles run during the week, I fancy the average would work out at very much less than one stop per thousand miles running.

"Owing to the speed regulations, it was rarely possible to obtain any comparison of the real relative powers of the cars except upon hills, for where these were really steep they brought the pace of the best of them down to the regulation level, and then when two or three cars were together—although I saw very few instances of reckless driving or risk taking—it was a case of each car 'doing its prettiest,' and the drive at these points became really interesting.

"The efficient manner, however, in which the medium-powered cars tackled the slopes, and the really slight (and in cases the absence of) advantage the majority of the higher-powered vehicles had over them, coupled with the fact that the full powers available on the larger vehicles could rarely be utilized upon the level owing to either unsuitable road conditions or police restrictions, strongly impressed upon me—and I know upon others also—the opinion long held that, given sufficient power in relation to weight for efficient hill-climbing, the use of high-powered vehicles for traversing British roads is quite unnecessary for the general requirements of the average tourist.

"Another conclusion which could not help forcing itself upon the critical observer where such a varied collection of cars were running together for comparison was that, generally speaking, in point of noise and vibration, a really striking improvement all round was noticeable. The worst sinners were not by any means confined to cars built in this country, whilst for quietness and smoothness of running the best of the English cars were more than on a par with the foreign ones—I him, of course, speaking of the petrol vehicles—and were, if anything, clearly in advance.

"Of the eight cars which were officially returned as 'broken down,' three only were of British construction throughout, and five were foreign, or mainly foreign, whilst it is also a noticeable fact—again dealing only with the petrol cars—that forty per cent. of the British-built vehicles secured over 290 out of 300 marks on each day's running, as against less than thirty per cent. of the foreign cars, all of which would go to show that on the point of reliability and evenness of performance British cars are now not only the equals of, but superior to, their continental rivals—a fact upon which all interested in the advancement of British industry must rejoice.

"Taken generally, the running of the cars throughout was so regular, and the absence of incident so marked, that one was almost led to the conclusion that but little further need exists for trials of this character, yet such a conclusion would be scarcely correct, and whilst the present trial have clearly demonstrated the remarkable advance which has been made in the art in the past two years, the trials should be continued until practically all the cars entered can come through without a breakdown, and virtually without a stop, and when this result is attained—and at the present rate of progress it may be reached sooner than one would think—all that can be got out of the trials in the way of proving to the public the reliability of the autocar will have been secured, and the club may very well give them a rest.

"By that time, too, common usage and general experience will have simultaneously proved the same thing, and the public will cease to take interest in affairs of the kind. Indeed, although considerable numbers of people turned out to see the cars en route, the general interest in the competitions was lukewarm and flat when compared with the enthusiasm of the Scottish crowds and the dense throngs and exuberant greetings with which the cars were received on the thousand miles. Automobilism is, in short, rapidly taking its place in the daily life of the people, and is, except in isolated districts, ceasing to be anything out of the common."

Not the Automobile's Fault.

A double victory is to be recorded concerning one of the widely heralded "automobile accidents" in this vicinitq. The grand jury of Somerset County, N. J., has completely exonerated the automobilist who, it had been said, was indirectly responsible for the death at Bernardsville of Mrs. W. V. Snyder, of Newark.

An investigation of the circumstances was made, but the evidence, so it is given out, showed that the machine was not moving over ten miles an hour and tnat the condition of the road at the point where the team was frightened was partially responsible for it.

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INNER TUBE LORE

Methods of Making Repairs and Solutioning on the Patches—Puncture Fallacies.

To mend an inner tube on the road is not the easiest or pleasantest occupation, and the uses frequently has a lot of trouble in battling with punctures and old patches that persist in coming off, and at an inopportune moment.

To make a patch hold properly it is necessary to do two things, and do them properly.

Firstly, to thoroughly clean and roughen the surface of the tube, and, secondly, to let the solution thoroughly dry before applying the new patch.

In the case of an old patch coming off, it is absolutely essential to remove all traces of the old solution, and the writer has found nothing better in the world than a small, hard nail brush well weted with petrol. This performs the duty with less exertion and more cleanily than glass paper.

When the place is thoroughly cleaned of old solution, take what is known as a file card and well roughen the tube right out to the full size of the patch that is going to be put on. A file card is a tool loke a nail brush with short steel bristles, and is used for cleaning the metal dust from the teeth of a file. It can be obtained with a handle like a nail brush, and is far better than matchheads or glass-paper. It gives a rough "tooth" to the tube, which makes the solution adhere splendidly. Rub on the solution to the cleaned place and, before applying the patch, let it stand as long as your patience will let you. Two or three hours, or even more, will not hurt if you are mending the tube at home.

If you have no file card with you, wrap the glass-paper round the back of the nail brush or round the handle of a file—this gives a firm grip to hold and does not cramp the fingers.

Never put prepared canvas on an inner tube.

Before inserting a fresh inner tube after a puncture, do not fail to pass your hand round the whole of the interior of the outer cover. The nail that caused the puncture may be protruding through the canvas ready to attack the new tube directly it is pumped up. Neglecting this precaution can be likened to the action of a man who sits down on a tin tack, springs up astonished, rubs the sore place, and reseats himself on the tack. Remove all the grit and small flinty particles that are to be found in the outer cover, and sprinkle French chalk lavishly before putting in the new tube. Partially inflate the tube before replacing the cover, and pass your hand round between the tube and cover to make sure that the tube is not twisted. These small precautions take a very little time to do while the cover is off, but they may save you a reptition of the puncture or leak.

The word "puncture" is the most badly used word amongst motorists. Everything is called a "puncture"; the proportion of real punctures is small. A more correct description of one's trouble would be: "I had tire trouble owing to having previously put on a patch in a slovenly manner," or "I tried to mend a faulty place in the tube on the road, and hadn't the patience to do it properly." On a memorable attempted non-stop run a driver is reported to have taken out and replaced his inner tube twenty-seven times. He called them punctures! He should really have said: "I did a silly thing twenty-six times in succession."



ONE OF THE ELECTRIC 'BUSSES ON FIFTH AVENUE, NEW YORK.

Colors Will Distinguish.

In the approaching reliability run to Boston and return the three Grout vehicles entered will be distinguished by their novel color scheme. They are finished in red, white and blue, respectively.

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WANT GENERAL ORDINANCE

Call for Meeting of Philadelphia Road Users to Frame Equitable Measure.

Now that the summer is over, the subject of automobile speed and other regulations is to be taken up in Philadelphia. Although an ordinance in the main satisfactory to motor vehiclists, which was tabled several months ago, is still to come up before councils some time this month, there appears to exist a desire to ventilate the subject still more thoroughly than has been done.

With that end in view, at a meeting of the Board of Governors of the Automobile Club of Philadelphia last week, John S. Muckle, vice-president and chairman of the committee on legislation of the club, offered the following resolution:

"Whereas, An ordinance, entitled an ordinance 'to regulate and license the running and operating of automobiles and motor vehicles, whether the motive power be electricity, steam, gasolene or any source of energy other than human or animal power,' was presented to Select and Common Councils of the city of Philadelphia last spring, and will be called up when Council reassembles in October; and

"Whereas, This ordinance may be objected to on the ground of its being 'class legislation;' therefore, be it

"Resolved, That the president of the Automobile Club of Philadelphia appoint a committee of two from this club, request the president of the Road Drivers' Association and the president of the Century Wheelmen each to appoint a committee of two from his organization and request the presidents of the steam and electric railroads of the city of Philadelphia to send representatives to a meeting of the above committees, said meeting to formulate a general ordinance governing the use of all vehicles of whatever kind in the city of Philadelphia, said ordinance to be presented to Select and Common Councils of this city, with the request that it take the place of all existing ordinances."

The resolution was adopted, and on motion Mr. Morris and Captain Muckle were appointed the committee from the Automobile Club.

An Interesting Traveller.

"Garrulous and incoherent" is the characterization the author places on "Two Thousand Miles on an Automobile," which has just been issued by the J. B. Lippincott Co., Philadelphia. Perhaps "rambling and discursive" would be better terms to employ, for it is not to be gainsaid that the reader who is looking solely for the doings of an automobile and automobilists had better seek them elsewhere than in this book.

No one who has had the good fortune to listen to one of the speeches or talks of Mr. A. J. Eddy, for it is the ex-president of the Chicago Automobile Club who is the author of "Two Thousand Miles," need be told that he is both witty and interesting. The production under notice is precisely what was to be expected from such a man.

A trip through Canada, New York and New England furnishes the material for this very modern traveller. The book is composed of about one part automobile to two parts generalization, some of the latter being striking to a degree. If Mr. Eddy's conclusions are not always agreed with, they are at least always plausible and well put. The moralizing at the birthplace of Samuel J. Tilden and on the Shaker community are cases in point. Always original, frequently daring, the writer holds his reader securely, his interest never flagging until the end is reached.

For the Carriage Trade.

An extensive exhibit of motor equipments for carriages and wagons will be made by the Westinghouse Electric and Mfg. Co. at the convention of the National Carriage Builders' Association, which is being held this week at Detroit, Mich. Three vehicles fitted with motors, etc., and six motors comprise the exhibit. Vehicle manufacturers will be shown how easy it is to equip their product with the Westinghouse apparatus, and thus enter the automobile field without having to produce the electrical parts themselves.

Races Again Postponed.

Ill luck continues to pursue the Detroit, Mich., races, originally scheduled for September 19 and 20. Postponed until after the Joliet, Ill., meet, rain necessitated a further relay on Monday. The next day it rained again, and after a conference between the manufacturers and owners and the promoters of the meet it was decided to postpone them until October 24 and 25.

Testing the Tires.

During the second week of the 3,000 mile tire trials conducted by the Automobile Club of Great Britain, 784½ miles were covered, giving a total for the two weeks ending September 13th of 1,434½ miles. Four of the tires went through the week without any mishap other than losing from 2 to 12 marks for pumping. The others suffered much more severely, one tire having lost 201 marks in all.

Exports Still Growing.

Contiuing its steady gain over last year, the exports of automobiles and parts for August reached a value of $71,907, as against $56,300 for the corresponding period of 1901. For the eight months of the fiscal year ending with August the gain is much greater. For 1902 the figures are $786,137, while for 1901 they totalled but $128,702.

Goes With International.

S. G. Rigdon, for four years in charge of sales for the Goodyear Tire and Rubber Co., has gone with the Internation A. and V. Tire Co. He will manage the sales department of the latter mentioned company. Mr. Rigdon is a man of exceptional ability and widely known in the trade.

MAGISTRATE AND PRISONER

They Were One, and Trial and Release Were Made in Short Order.

A great deal depends on whether a magistrate is in an automobile or out, when its occupants are charged with violating the speed ordinances. In the former case an acquittal is very likely to be the outcome, and this quite irrespective of the evidence in the case.

Last week, so the story goes, Magistrate Brann, of this city, who does not own an automobile, but has friends who do, started to take a short trip into the suburbs. It was while he was returning from this particular excursion that he and his friends were held up by the policeman. They had sped down Jerome avenue at a moderate pace and were crossing MacComb's Dam Bridge when they observed that they were being followed by a mounted policeman.

As they got to the south side of the bridge the policeman overtook them. Pulling up alongside of the machine he gruffly said: "I place you under arrest."

"What for?" asked one of the members of the party, timidly.

"For exceeding the legal limit of speed," replied the policeman, who was attached to the West 152d street station, but whose name is not know to the magistrate. It is not believed he recognized the latter, who had recently shaved off his mustache.

"You have made a mistake, sir," remarked Mr. Brann. "We have not exceeded the legal limit."

"I know better," rejoined the policeman. "You are under arrest and you must go to the police station."

"Well, I am Magistrate Brann, and if you insist on placing these friends of mine under arrest I shall hold court right here in this automobile and discharge them on the spot," hotly returned the magistrate, who felt that the policeman was officious.

The policeman blushed when he learned the identity of the person he was speaking to, but quickly recovering his composure he insisted that he was right.

"If you were not in this automobile and personally interested in its occupants, you would fine them $5 or $10 if I brought them before you," declared the policeman.

"No, I wouldn't!" shouted the magistrate. "I'd first examine into the case, listen to all the evidence and draw my own conclusions as to the justice of the complaint. In this particular case my conclusion is that the party that you want to arrest is not guilty."

The policeman was still trying to justify his action when a roundsman came up and ordered the policeman to patrol his post, and the incident was closed.

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FAVOR LICENSE SCHEME

If Conducted by the State—Local Plan Condemned by Clubmen and Makers.

If the automobilists of this city and state elect to play the game of their enemies and indorse a licensing scheme, as seems not improbable, it will at least be one of their own fathering. They will not accept the one proposed for them by the League of American Wheelmen.

That much was decided at a meeting of the Board of Governors of the Automobile Club, held at the office of President Shattuck on Monday. The offensive ordinance introduced in the Board of Aldermen at the instance of the board of officers of the League of American Wheelmen, which was given in full in the Motor World last week, came up for consideration. It was unanimously decided that this particular ordinance should be opposed. This opposition is based on two objections to it. The first is that such a plan is expressly forbidden by the Doughty law, passed by the Legislature of 1901. Section 169a of that law reads as follows:

"Licenses or Permits for Automobiles.—Any person owning or operating an automobile or motor vehicle, whether the motive power of the same be electricity, steam, gasolene or other source of energy, except such as are used for public hacks, trucks or vehicles for hire, shall not be required to obtain any license or permit pursuant to the provisions of any local or municipal resolution or ordinance, or the rules or regulations of any commissioners, trustees, supervisors or other authorities having charge or control of any highway, public street, parkway, driveway or place, or pursuant to the provisions of any municipal charter or any other statute, except as herein contained."

The second objection is somewhat similar. It is that the club is opposed to local ordinances of this kind. Such a system was pronounced unpracticable, as under such a plan an operator would have to take out a license in every municipality through which he had to pass.

The discussion left little doubt, however, that the governors of the club favor a State licensing system, failing the inauguration of a national one, which seems to be quite out of the question. It is not all unlikely that the Legislature will next winter be requested to enact a law putting a licensing scheme into effect.

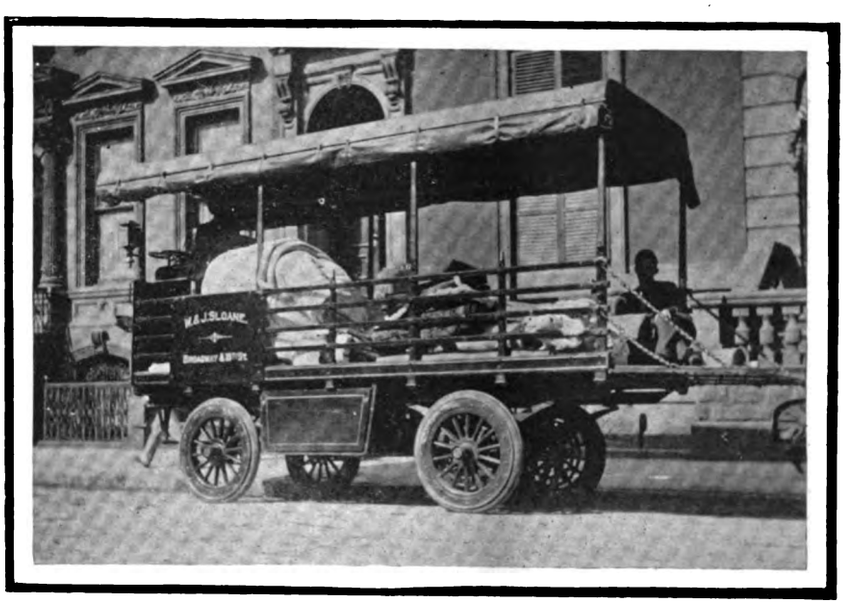
On Tuesday a formal invitation was issued to the National Association of Automobile Manufacturers to take joint action in the matter, and the following committee from the club was appointed: Messrs. George F. Chamberlin, W. W. Niles and Albert R. Shattuck.

The same afternoon the executive committee of the National Association met, accepted the invitation and appointed this committee: Messrs. S. T. Davis, jr., Frederick Martin Lande and H. Ward Leonard.

A nominating committee, composed of Dave Hennen Morris, W. J. Stewart and J. M. Hill, was appointed to report a ticket for the election of officers, which will be held on November 17. Mr. Shattuck, the present incumbent of the presidency, will not be a candidate for re-election.

"I have had the honor twice," said Mr. Shattuck, "and I think that is enough for one man. There ought to be rotation in the office for the good of the club. I shall always take an active interest in its affairs, however, and will willingly do any committee work that may be given me."

The request of several manufacturers that the club give an endurance test for heavy trucks and commercial vehicles was laid before the governors. It was decided to reply to them that the matter would be discussed with the trade at the next auomobile show, and the form and dae of the test then determined. The reliability run and the lateness of the season will prevent its being held before next spring.



DELIVERING CARPETS IN NEW YORK.

Recent Incorporations.

Jersey City, N. J.—Eureka Automobile Co., with $400,000, to manufacture automobiles, etc. Incorporators—N. Metzenbaum, E. W. Schneider and C. J. Dorticus.

Newark, N. J.—The Cleveland Automatic Machine Co., with $1,000,000 capital. Incorporators—G. H. Kelley, G. C. Whitcomb, J. G. Russell and A. L. Garford.

Jersey City, N. J.—Novelty Motor & Engineering Co., with $100,000 capital, to manufacture motors, engines, etc. Incorporators—H. S. Gould, F. K. Seward and K. K. McLaren.

Binghamton, N. Y., automobilists are talking of forming a club. A meeting to effect an organization is expected to take place this week.

SPOILED THIER SPORT

Authorities Were Notified of Alleged Scorching Trip—Plans Called Off.

No small amount of ill feeling was caused last week by the proclaiming of an alleged plan to undertake a record breaking ride from this city to Atlantic City, N. J. The Automobile Club of America, through Secretary S. M. Butler, was the active party in the matter. It sent out warning notices to authorities of towns and villages along the route, detailing the circumstances and asking that the offenders be apprehended.

Either in consequence of the warning or because no such expedition was seriously contemplated, the date set passed without there being anything "doing." Zealous officials along the route were alert, but they had their trouble for their pains. No Red Devils or Green Serpents materialized, and no arrests were made.

Now the accused persons deny that there was any plan on foot to make the run. It had not passed beyond the talking stage, and probably never would have done so, they say. This being the case, the action of the club is regarded as both unwise and unwarranted, not to say impertinent. "As if there was not enough feeling against automobilists now," is the way one of the aggrieved ones put it.

The officials of the club show no signs of regret for their action, however.

They say that the run was really contemplated and that its action blocked it effectually. By this action, too, the club showed that it was now, as always, law abiding and opposed to violations of the highway laws.

The New York branch of the International Motor Car Co., 91 Fifth avenue, has been closed.

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ANALYZED BY FIGURES

Highways, Canals and Railroads and Their Comparative Costs.

"Good roads are just as important as good canals," said W. L. Dickinson, vice-president of the New York and Chicago Road Association. "We spend money for canals, why not for good roads? Our 2,500 miles of canals are estimated to have cost $172,000,000. A bill is now pending for the appropriation of $28,000,000 more for the Erie Canal. In 1894 the total canal tonnage was 3,882,500, but it has been decreasing yearly since then. This tonnage, compared with the annual railroad tonnage, is insignificant. Every pound of this railroad tonnage has been hauled over a wagon road. What better argument do you want for good roads?

"The argument proves anything but convincing when analyzed by figures. Suppose a railroad one thousand miles in length carries ten million tons a year, and has freight stations every six miles. Suppose, even that it has no terminal business, but receives its whole tonnage from its 167 stations, evenly distributed. This would make an average haul of five million tons for the whole mileage and any part of it. From each station it receives sixty thousand tons, which have been carried over wagon roads from all parts of a territory of about 120 square miles. Figure the mileage of wagon roads required in each of these territories at forty miles, which is very low, and it is seen that forty miles of wagon roads must be supported from sixty thousand tons of goods, while six miles of railroad, running through the same district is supported from five million tons.

"With canals the case is very similar. They, like railroads, are arteries of commerce. To make an argument in favor of wagon roads out of this material would require that forty miles of wagon roads could be built at one eighty-third of the cost of six miles of railroad, or one mile of wagon road 553 times cheaper than one mile of railroad. If wagon roads could be made available for long distance hauling—as in those old days when most road systems in Europe were inaugurated—the case would be somewhat different. But this is an impossibility.

"Road building, viewed financially, is a purely local matter, and automobilism is not strong enough to make it otherwise. To connect the local roads and thereby create first a State road system, and eventually a national wagon road system, is a matter of luxury and convenience, highly commendable, no doubt, but in no wise an economical necessity. So long as bad roads constitute the only efficacious protection against high speed automobiles, and also a pretty fair guarantee of well built automobiles, there is not likely to be any widespread enthusiam for a for a cross continental system of billiard table roads.

"In the United States, as in South Africa and Australia, the automobile must earn its spurs on such roads as exist before any further awards will be decreed for it out of public funds. The worst roads must necessarily produce the best automobiles in the long run."

Wind as a Factor.

Air resistance is really the worst enemy the racing automobilist has to encounter. As high speed is reached the resistance of the air increases by leaps and bounds, every leap being greater than the last, until, as it has been aptly put, the "air becomes solid," and the object trying to pierce its way through becomes heated by friction against the air and deformed, just as a lead bullet is changed in shape when it passes through a substance which materially arrests its progress.

In La France Automobile a writer, M. Ravel, points out that extraordinarily fast times are mainly, if not wholly, due to the speed and direction of the wind.

M. Ravel calculated that in a motor car whose engine develops, say, 50 horsepower, the power is absorbed as follows, viz: Overcoming resistance of the air, 29 horsepower; overcoming resistance to traction, 9 horsepower; loss in transmission, 12 horsepower; total, 50 horsepower—showing that over 75 per cent of the effective power, and nearly 60 per cent of the total power, is absorbed by, so to speak, forcing back the air.

It is obvious, therefore, that under these circumstances a favorable or unfavorable breeze which moves the air in one direction or the other at a speed of, say, ten miles an hour, or, roughly speaking, five yards in a second, will make a difference in a record of nearly twenty miles an hour, for in the case of a contrary wind the automobile has to drive through an atmosphere coming toward it at ten miles an hour.

Works Harm to Tires.

One of the first things the user of pneumatic tires learns is that oil of any kind is exceedingly harmful to them. Its destructive influence on rubber is such that every precaution is taken to prevent their coming in contact.

The increasing use of live axles on cars seems to render more care necessary in guarding against this source of danger. Fixed axle bearings have not much tendency to distribute oil over the wheels, and though chains, if freely oiled, may do this, their free oiling is rather the exception than the rule, to the great benefit of chain manufacturers.

The live axle, on the other hand, carries a copious supply of oil or thin grease in its differential box, which often has a tendency to make its escape at one end or other of the axle, and, after lubricating the brake drum on the way, to spread in a neat radial pattern over the inner side of the tire. When this is wiped off the traces of its destructive action on the rubber are generally more or less visible.

MADAGASCAR'S FIELD

Local Conditions and Recent Tests Point to an Opening.

It has more than once been pointed out that the island of Madagascar is one eminently suited for the practical trials of automobiles. There are wide undeveloped regions without any railway communication whatever with each other, with the capital or with the ports on the sea.

Tananarivo, the capital, is situated in a mountainous region, in the centre of the vast island, and several days' march across arid deserts from the coast. It takes news a long time to reach Europe from General Gallieni, the military governor of Madagascar; and therefore it is only quite recently that letters from Captain Grüss have reached Paris giving details of some interesting automobile experiments that were inaugurated by the Governor General in May last.

General Gallieni left Tananarivo on the morning of May 10, piloted by Captain Grüss, and the next afternoon at 4 o'clock he reached Maevatanana, which is 350 kilometres distant from the capital of the island. The number of automobiles in the convoy was three, of which one was a brake of 12 horsepower and another a wagon loaded with baggage.

The road, despite the many obstacles encountered, was in excellent condition, and General Gallieni addressed a letter of congratulation to his responsible agents for the admirable state of repair in which the western road had been maintained. Captain Grüss having taken the general as far as Maevatanana, made his return journey to Tananarivo, which he reached on the following Saturday evening. He made his return over the 350 kilometres to the capital under similar conditions and with equal rapidity—the automobile journey being at the average rate of twenty kilometres an hour.

It should be observed that before the introduction of automobiles not less than an eight days' journey was required to go from Tananarivo to Maevatanana by the old methods of conveyance, locally known as "en filanzane." Of course, greater speeds than twenty kilometres an hour have been accomplished by the automobile; but when it is considered that Captain Grüss was obliged to traverse new and in parts rough roads, with three automobiles, one a heavy baggage wagon, the performance was a good one. It is doubtful if railways will pay in Madagascar—certainly not for many years to come.

The laying down of good roads is, of course, a necessary measure of development, and then the employment extensively of automobiles will largely enable the colonists to dispense with costly lines of railway. Madagascar, therefore, should be a fine field for the practical employment of the automobile for commercial purposes.

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FOR SIGHT SEEING

Reduces the Cost to Tourists in a Provincial City by Four-Fifths.

"With the incoming to this sleepy old provincial city of more and more American tourists has come at last the automobile," writes a visitor to Charlottetown, P. E. I.

"It is itself a tourist machine, in fact as well as in name, for as the first horseless vehicle to win a place for itself far away from the large American centres in the north country, it is used here in the city as a cheap and rapid means for showing the sights. Its introduction was suggested by the constantly increasing carriage business done around 'the square'—every interest centres around 'the square' in Charlottetown—in taking visitors for a drive around the outskirts of the city, over the parkway along the shore of the bay, and back to 'the square' again by a route that shows something of the business activity of the place as well as the principal and more characteristic buildings.

"Such a drive with a horse takes an hour or more, and forms the basis for a charge of 50 cents for each person carried, and the carriages are surreys or carryalls, with seats for two or four.

"With the auto things are different. There are seats for ten passengers, four on each side facing inward and across the vehicle, and two on the seat in front with the driver. Instead of 50 cents per passenger the cost for a trip around town in the auto is only 10 cents; and instead of taking an hour or more in time, the auto enables one to see about all there is in twenty-five or thirty minutes.

"This auto has been in service now only about three weeks. Its owners style themselves the Charlottetown Automobile Co. and from the favor with which their enterprise has been so far regarded, they expect it to prove profitable. If there are people who wish to ride, the machine makes its little tour three or four times before noon, and perhaps six or eight times in the afternoon. On good days it has carried from two or three passengers up to ten on each trip, the best days for business being the two in each week when there is a steamer to arrive from Boston and Halifax.

"Disadvantages of the automobile here are two. It finds the peculiar crosswalks of Charlottetown streets a serious hindrance to fast speed, and it scares the horses. Streets in this old city are like country roads much broadened, and there is no pavement; consequently the flagstones set into the roadway at the street intersections come in time to be so much higher in level than the rest of the driving surface that a carriage load of people driving over them at any speed would be jolted frightfully, possibly with serious results. Such an occurrence is practically out of the question with Charlottetown horses, but with the auto the driver has to be constantly on the alert to slow down for crossings, with the result that his passengers not infrequently begin, after a time, to urge him to 'let her out a little.'

"But the Charlottetown chauffeur knows his business. With the horses the difficulty is the same as that met in large cities except that it is worse. Charlottetown horses appear loath to get used to the steam rival, and the progress of the rig, especially with the exhaust open, through the highways and byways of the town is marked by a series of balkings and shyings and other equine remonstrances. The auto meets these demonstrations by slowing down or stopping until the obstreperous horse is out of the way—another source of annoyance to passengers."

Kept Complete Figures.

Unusually complete data were compiled by W. H. Moore, a Watertown, N. Y., man, who, with his son, recently toured from that place to Asbury Park, N. J., and return via a circuitous route.

The tour occupied four weeks. The route led through Syracuse, Rochester, Elmira, Binghamton, Scranton, Pocono Mountains, Delaware, Water Gap, Asbury Park, Allenhurst, Rumson Road, Red Bank, Summit, Jersey City, New York, Albany, Schenectady and Utica back to Watertown.

The total mileage was 877; actual running time average 8 19-100 miles an hour; the fastest time for a continuous half hour run was 14 miles an hour, the slowest 3½ miles an hour; consumption of gasolene, 135 gallons, or one gallon for each 6.4 miles.

They were laid up for necessary repairs to pump one hour, and delayed but half an hour by heavy thunderstorm. This storm proved to be a blessing, as a miscalculation was made on water supply, which was made good during the storm from an eavestrough.

They estimate the condition of the roads 10 per cent fine, 20 per cent good, 50 per cent good average country roads, 10 per cent bad, and 10 per cent a disgrace to civilization. Mohawk Valley roads came in for a large percentage of the last 10 per cent.

A Winton touring car was used by the Watertown men.

Its Latest Crime.

As if the automobile has not been charged with crimes and misdemeanors enough, it is now held up as an alienator of a husband's affections. Dr. Milton B. Pine, of Chicago, is the offending husband, and his wife, Mrs. Fanny Uttley-Hunt Pine, has brought suit for divorce.

The defendant has two machines. Much of his time is spent automobiling up and down Michigan avenue, according to the complaint of his wife. But aside from transferring his affections to his automobiles, Mrs. Pine says her husband is cruel to her.

PROFITABLY USED

Gasolene Delivery Wagon so Successful That Another Will be Built.

Another attempt to use the automobile profitably in the delivery service for large department stores has been made this summer in Boston, and the single wagon in service has proved so successful and, what is more, so reliable, that this experiment may be reckoned as a considerable step in progress toward the thoroughly satisfactory commercial automobile.

It is a 5,000-pound rig, capable of carrying three tons, and is being tried by a firm that ran a large number of the old New-England Electric Vehicle Company's leased wagons when that company was in operation, and the firm is therefore able to give the best possible judgment regarding the relative efficiency of gasolene and electric motors. The firm's superintendent says:

"We are not saying anything against the electrics. They did our work for months, and did it in good shape, climbed the hills all right so long as there was anything left in the batteries, and made the long runs in good time. We have had it running on our long route out through the Newtons for eight weeks, and it has never had to be towed in once, or had a bad breakdown. It covers Newton, Newton Centre, Newton Corner, Newtonville and Auburndale—goes two miles beyond Norumbega Park every day—and takes some terrible hills out there without balking a bit. It has three speeds, two, six and fourteen miles per hour; and the driver has run it up a steep grade on Beacon Hill again and again at six miles without any trouble at all. They call it a twenty-horsepower engine, but it will develop more than that; twenty-five, anyway.

"The wagon has made fifty and sixty miles a day ever since we have been running it. Six horses couldn't do the work it does and cover the territory it covers. We've had two tons on it all right, and it often carries a ton and a half; and it gets over the ground, hills and all, as well as when it runs light. We have had a cyclometer on it for three weeks, and the figures were 914 miles when it started out this morning. It's almost more powerful than we need. We are having built a second wagon of the same sort, which will weight about 3,500, and have a little smaller motor. I was anxious for plenty of power. I didn't want the thing to fail, because of too little power; but the first wagon has too much, if anything. There is very little noise or vibration to it, though. You can set a pencil on end on it while the motor is running, without having the vibration knock it down. When the wagon is out on the road it makes almost no noise at all, very little more than the electrics. It hasn't scared any horses, we've had no complaints, and no letters sent in, or anything of the sort. It is doing well."

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WINTON AND CANNON.

(Continued from page 7.)

able. It was made more than ever apparent that the maintenance of permanent interest in automobile racing is dependent upon an improvement in the respects mentioned.

Of the management it is only justice to say that it was entirely satisfactory. The first race was called promptly on time and throughout the afternoon the waits were no longer than was rendered necessary by the scantiness of the entry list.

Six vehicles came to the wire for the two mile race for electrics, viz., four Waverleys, a Buffalo and a Neftel. The last named, driven by Knight Neftel, proved itself easily faster than the rest, and had a long lead when it passed under the wire in 4:23. W. G. Titcomb's Waverley was second, C. F. Peckham's Waverley third.

In the three mile race, for steam stock carriages, the winning vehicle proved to be a Toledo, with a Stanley and a Locomobile in second and third positions. In the second mile the Toledo, which had been husbanding steam, let out and pulled ahead, overtaking both the others and finishing first, giving the spectators their first taste of sport. The time was 5:09 1-5.

With the events as an appetizer, Alexander Winton was next given the track. In his "Bullet," fresh from its Cleveland triumphs, he essayed to establish a new ten mile record.

An ovation but little short of that given Fournier last year greeted the famous driver and his car. Every one seemed to know that the event of the day was about to take place, and the long, low car, with its rakish lines, was keenly watched. At the start it looked as if, in spite of Winton's fear of the track, which has but little banking, a sensational performance would be recorded. The mile was covered in 1:06 1-5—better than Fournier's fastest—and the next was 4-5 faster. From then on, however, the speed slackened steadily, until, when six miles had been covered, the attempt was given up, owing to the roughness of the track and the difficulty of making the turns.

As it was, however, the five mile performance was better than any yet made. The comparison with the records made at Cleveland on September 16 is as follows:

	Providence.	Cleveland.
First mile	1:06 1-5	1:20
Second mile	2:11 3-5	2:23
Third mile	3:17	3:25¾
Fourth mile	3:25	4:28½
Fifth mile	5:30 3-5	5:31¼
Sixth mile	6:39 2-5	

The next event, a five mile race for light gasolene carriages, proved to be almost a walkover for a Stevens-Duryea car, it winning easily in 7:42½. An Oldsmobile was second and a Knox third.

The steam car built by George C. Cannon was next given a chance to distinguish itself against time, its two man control barring it from the competition events. Manned by Cannon and his chum, Marseilias, it made the fastest mile of the day, 1:05¼, although its five mile time in a subsequent trial was behind Winton's, being 6:05. Cannon and his odd appearing car, with its huge smokestack, got a reception only second to Winton. Its fast mile cinched the hold it possessed on the spectators.

The best real race of the afternoon was the one which brought together five Winton touring cars for five miles, with well known owners as drivers. There was George H. Merrill, jr., of Norwood; Frank Townsend, J. B. Mills, George Otis Draper, of Hopedale, and Fred Tudor, jr., of Boston. Mills took the lead when they finally got away. He kept it for two miles, with Draper a good second and Tudor holding back comfortably at third, Townsend fourth, and Merrill fifth, with his machine running poorly. On the third, Tudor began to creep up on Draper, to the great delight of the spectators, and as the two rounded into the backstretch they could be seen gliding along at high speed, neck and neck, for some distance. At the half mile Tudor had forged ahead, and on the fourth he gradually overhauled Mills, finishing in fine style almost an eighth of a mile to the good, amid great enthusiasm from the grand stand. Mills was second and Townsend third. The time was 9:13¾.

A five mile race for heavy gasolene cars, limited to thirty horse power, gave Percy Owen a chance to bring out Winton's light racer, called the "Pup." He had against him two Wintons, a Stearns and a Darracq. Owen was an easy winner, in 6:25¾.

Owen was leader again in a free for all race for gasolene cars, five miles, in which the contestants were Winton, with his big racer, and Harold Brown, in his Darracq. Brown, with his tonneau, had no show at all against the racers, stripped of all trappings, and Winton's "Bullet" was not in its best form. Owen's time was 1:25½, 2:40, 3:55½, 5:12, 6:43½. He did better in the sweepstakes for winners, in which he was practically the only starter. His time then was 1:19½, 2:32, 3:46, 5:00½, and 6:14¾, a record for 2,000 pound gas cars.

After the races the visiting automobilists were entertained at an informal smoker and "feed" at the Crown Hotel, the local club's headquarters.

The summary follows:

Motor Bicycles, Five Miles—Won by Indian (George M. Holden); Orient (John M. Farr), second; Orient (F. W. Godfrey), third. Time, 7.34.

Electric Vehicles, Ten Miles—Won by Neftel (Knight Neftel); Waverly (W. G. Titcomb), second; Waverly (C. F. Peckham), third. Time—One mile, 2.17; two miles, 4.23.

Steam Vehicles, Stock Cars, Three Miles—Won by Toledo (A. L. Lee); Locomobile (W. Hinscliffe), second; Stanley (W. H. Talbot), third. Time, 5.08.

Exhibition by 50 horse power Winton Bullet, operated by Alexander Winton—One mile, 1.06½; two miles, 2.12fff; three miles, 3.18 4-5; four miles, 4.25; five miles, 5.30 3-5; six miles, 6.39 2-5. The figures for four and five miles are new world's records.

Gasolene Vehicles, Under 1,000 Pounds; Five Miles—Won by Stevens-Duryea (J. F. Duryea); Oldsmobile (D. B. Huss), second; Knox (George Reed), third. Mile times—1.38¾, 3.09fff, 4.39¾, 5.11¼, 7.42½. All new records.

Exhibitions by Cannon Ball Steam Vehicle, operated by George C. Cannon and Thomas Marsalis—First trial, one mile, 1:05¼. Second trial, five miles. Times, 1.21½, 2.26¾, 3.41½, 4.54, 6.05.

Special race for Winton touring cars, driving parts to be alike, five miles—Won by F. Tudor, Jr.; J. B. Mills, second; Frank Townsend, third. Time, 9.13¾.

Gasoline vehicles, weighing over 1,300 pounds, limited to 30 horse power, five miles—Won by Winton Pup (Percy Owen); Stearns (George Weed), second; Winton (F. Tudor, Jr.), third. Mile times—1.25, 2.40fff, 3 55¼, 5.10¾, 6.25¾. New records for the class, except first mile.

Gasoline Vehicles, Free-for-all, Five Miles—Won by Winton Pup (Percy Owen); Winton Bullet (Alexander Winton), second; Darracq (Harold H. Brown), third. Time, 6.43½.

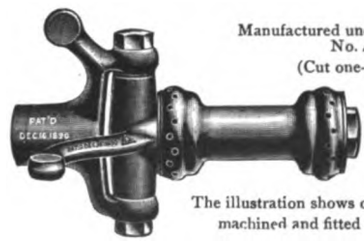
Sweepstakes (winners and seconds in previous events), Five Miles—Won by Winton Pup (Percy Owen); Toledo (A. L. Lee), second. Mile times—1.19½, 2.32, 3.46, 5.00½, 6.14¾. New records.

Motor Bicycles, Special, Five Miles—Won by Orient (John Ruel); Orient (L. P. Callahan), second; Orient (Russel M. Dana), third. Time, 6.50½.

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INSPECTING THE ROADS

Highway Commissioners Find Motor Vehicles Quicker and Less Expensive Than Horses.

What was probably tne longest inspection tour ever completed in Massachusetts was taken not long ago by Highway Commissioners McClintock and Parker to look at the condition of the State roads that have been constructed within the past year on the line of the old Troy and Boston turnpike, and one of the interesting things about the trip was that they made it in an ordinary steam automobile, instead of with horses and carriages. More than that, they came back to their offices almost enthusiastic over the machine as a time-saver and money-saver in road work of that sort.

They started from North Adams one Monday morning, with a chauffeur and one of their own district inspectors in the front seat of the vehicle, and proceeded eastward; they made the whole distance back to Groton, including a number of side trips to roads lying somewhat off the direct line, in time for them to reach Boston by train for evening dinner on Wednesday. A three-day trip! And by the old method of going up each day by train and working out from the railroad by means of a carriage and double hitch of horses, the commissioners say it would have taken fully nine days to accomplish what they did with the auto in three.

Roads in thirty-two towns were inspected, and the automobile journey involved a run over Hoosac Mountain with a grade averaging ten per cent for two miles and a rise of 1400 feet vertically, as well as a run over Northfield Mountain, from Northfield to Irving, where the road is rough and undergoing repairs. The vehicle climbed everything, and made its way over the uptorn sections of the road as well or better than a horse. Just how many miles were covered would be hard to say, but on the direct route the trip included North Adams, Charlemont, Buckland, Greenfield, Montagu, Irving, Orange, Athol, Phillipston, Templeton, Gardner, Westminster, Fitchburg, Lunenberg and side trips took in Shelburne, Buckland, Ashfield, Deerfield, Whateley, Colrain, Northfield, Ashby, Townsend, Groton, Leominster and Lancaster.

Commissioner McClintock said of the comparative cost of the automobile and horses: "Our whole trip, including the charges for the machine and for hotels, cost inside of $75. If we had used horses the numerous teams we should have had to hire and the greater amount of travel by railroad, and the fact that nine, instead of three days would have been required, would have made the tour cost well toward $200. With horses the cost over the highways would have been twice what the automobile cost, I should say, and the cost of railroad fares in the old method would have been three times the cost of automobile transporaion. The hotel charges, of course, would have been tripled. More than that, the run through the country in a swift machine was a pleasure, compared with a trip by horses, and the peculiar characteristics of the automobile make it naturally a good detector of bad road. Moving quickly along a road in the machine, it is possible to tell by the feel of the road and the motion of the vehicle where even the slight defects are located. With horses there is always a side-motion to the vehicle, which deceives you, if you are trying to tell what the road is like by the motion, and it is necessary to depend on sight almost altogether. The automobile used was of 4½-horse-power, of surrey pattern, with a folding canopy which, in case of rain, could be put up in such a way that it formed a regular carry-all top. We hired the machine at Worcester, and it was run up to North Adams over the road. There would be no economy in having the commission purchase a machine for its inspections, for the reason that the machine would have to be shipped about all around the State in order to have it on hand when and where it would be needed. If we hire, we have a machine handy practically all the time."

The Commissioners made several shorter trips with an automobile earlier in the season, notably one over the Lowell series of roads, to determine on the need of development by the State, and another down through Essex County, and they were much impressed then with the machine's good points. This last trip, longer and in places tremendously hilly, seems to have established the horseless carriage permanently in their good favor.

Some Racing Expenses.

Automobile racing comes high when it is pursued on the Winton scale. For expressage alone the two Winton cars—the Bullet and the Pup—have cost their owners $500 in a single week. For example: The cars came to Detroit from the Cleveland meet, but the races were postponed. They were shipped back to Cleveland the same night and then expressed to Providence, R. I. Next they will be sent to Joliet, Ill., and then to Detroit again.

Though Sleeping Car Line to Grand Rapids, Mich.

A Pullman Sleeping Car of latest construction is now attached to New York Central train leaving Grand Central Station at 4:00 p. m., daily, running through over the Michigan Central Station, arriving at Grand Rapids at 12:55 p. m., next day, connecting in Union Station for all points in Western Michigan. For information and sleeping car reservations inquire of New York Central Agents. ***

HISTORICAL STEAM RELIC

Examination Reveals a Piston Slide Valve and Ingeniously Simple Contrivances.

There is in a London depot an historical relic of the greatest interest and importance—no less than a model of the first locomotive ever made and run in England. It was invented and constructed by William Murdock, the well known assistant to James Watts, who, second only in importance to Watt, who, second only in importance to connection with steam engines, among others the "D" slide valve and the "sun and planet motion."

The date of construction is not definitely known. Mr. Murdock's son, when living at Handsworth, informed Dr. S. Smiles that this model was invented and constructed in 1781, but, after perusing the correspondence of Boulton and Watt, Dr. Smiles has inferred that it was not ready for trial until 1784. The engine had been continuously in the possession of the Murdock family till 1883, when it was purchased from Murdock's great grandson by Sir Richard and George Tangye.

An attentive examination of the model well repays one, and reveals many beautifully simple contrivances, showing Murdock's genius for the adaptation of simple means to secure his desired ends. The height of the small locomotive is about 14 inches, its length 19 inches, and the extreme width over the driving wheels is 7 inches. It consists of an oblong board, mounted upon three wheels—two driving wheels at the rear attached to a cranked axle, and one steering wheel in front arranged under the board and running in a swivelling fork, which can be set by a tiller handle above. Behind the driving wheels is the boiler, which is a rectangular vessel 3⅜ inches high, 4¼ inches long and 3⅛ inches wide, constructed of brazed copper. Through the boiler a flue passes obliquely, contracting from a circular chamber forming the firebox to a small funnel in the top of the boiler, which serves to carry off the products of combustion from a spirit lamp arranged to burn within the firebox.

The steam cylinder of the engine is mounted on the top of the boiler, and the lower part passes into it, and is surrounded by steam. The piston rod passes upward, and is attached to the end of a vibrating beam; this beam passes to the front of the carriage, and is pivoted in an upright pillar. The little engine is worked by the expansive force of steam only, which is discharged into the atmosphere after it has done its work of alternately raising and depressing the piston in the cylinder. The diameter of the piston is three-quarters of an inch, and

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the length of its stroke is about two inches. As the piston moves up and down it causes the beam to rotate the driving wheels, by means of a connecting rod attached to the cranked axle.

The steam valve is very ingenious, and it is driven from the beam by a projecting rod, so arranged that the valve is moved at the termination of every up and down stroke by the last portion of movement of the beam upward and downward. It is a piston valve with two pistons, ground to work easily, but pressure proof, in the valve cylinder. The space between the pistons is in constant communication with the boiler, and the steam is admitted by two ports—one at the top and one at the bottom of the cylinder—so arranged that when the piston valve is up the steam enters the upper port and drives down the piston, while the exhaust steam from the under side discharges from the cylinder by the lower port into the air through a tube connecting the two pistons of the valve.

This is probably the earliest (piston) slide valve used in a steam engine, as at the date of its construction Boulton and Watt did not use Murdock's "D" slide valve in their engines, the patent for the latter not being taken out by Murdock till 1799 (Patent No. 2,340), about fifteen years later. In this model the idea of the slide valve had certainly entered Murdock's mind.

The safety valve is let into the boiler near the steam cylinder, and it is held down by a little tongue of metal—a very efficient and simple contrivance. A leaden weight is placed above the steering wheel to balance the machine and to prevent it tipping over when the water is in the boiler. The wheels are constructed of brass tube brazed together. Every part of the engine is both well designed and well made. It is interesting to notice that at some time the wood under the boiler has been on fire, and it still shows the marks of charring. It has evidently been pieced and protected by an iron plate to prevent a similar mishap.

Making Aluminum Castings.

To make aluminum castings the alloy should be melted in a plumbago crucible, using charcoal fuel. Before placing the aluminum in the pot it should be dipped in benzine or paraffine oil. The metal is covered with powdered charcoal, and care must be used not to heat too much; if it shows a dull red it is overheating. Aluminum is a difficult metal to cast sound. Nitrate of potash stirred well in with the molten metal assists in cleansing from impurities. The mould must not be rammed too hard, and if cored work is being cast the cores must be made very carefully—in fact, only a skilled coremaker can successfully make cores for aluminum castings. The reason of this is, of course, due to the great contraction of aluminum. Likewise, if the castings are any size or length, care wyill have to be taken that they do not sear in the mould. The castings should always be taken out immediately they are set.

GET ALONG TOGETHER

Must the Automobile and the Horse—Good Sense Only Needed.

"At the present time, when the general public, the drivers of horses, farmers and automobile clubs are showing a lively interest in all such measures, actual or proposed, as have to do with the safety of our thoroughfares, urban, suburban and rural, the question of the teachableness of the horse becomes of importance," say a contemporary.

"The horse and the horseless vehicle have to get along together. Is there any essential reason why the patrons of one should hate the patrons of the other form of locomotion?

"An English suburban doctor of wide experience lays down the fundamental theory that horses and automobiles are on a par in this, that neither should be in the hands of persons who cannot control them. He says: 'I hold no brief for the motor car. I am passionately fond of horses, and merely look upon a car as a convenient and rapid means of locomotion; but I was taught as a boy, and have had ample opportunities of verifying the lesson, that horses may be broken to anything; also that it was the owners' duty to educate them to face the ordinary trials of the road. Now, any horse may, in a very short time, be taught to eat off the noisiest and smelliest motor car in existence. What right, then, has an owner of horses to go about the public highways with an animal that is admittedly a danger to himself and others?'

"There was the same sort of excitement as at present when the roads north, south, east and west were covered with bicycles. There were accidents. But after a while the horses got accustomed to what had been a mystery to them. The authority just referred to holds that most of the automobile mishaps are due to the communication of the driver's fears to the horse. 'It is a matter of daily notice to every horseman that most horses would face motor cars boldly enough if only their driver's panic-stricken hands would let them; and it seems the acme of absurdity that such incompetents should vaunt their dangerous incapacity and imagine that their wish to travel behind half trained, and therefore unsafe, animals should be allowed to cripple a great industry.'

"With the horse familiarity breeds contempt: 'One mistake constantly made by drivers is to fancy that horses are frightened by the speed at which anything approaches them. Horses fear and dislike anything to which they are not accustomed, but once get them used to the sight and sounds of the motor car and it matters little whether it comes at five miles an hour or fifty. A very few drillings with a motor car, and, if necessary, Galvaine's tail rope, will teach any horse that there is nothing to fear; and, after his lesson, if he shy, it will be because his driver has shied first.'

"All that is necessary is to train up a horse in the way that he should go, and whenever an imported racing machine comes along he will not depart from it. Wise horsemen are accepting this view. It is a much more rational thing to do than to kick against the inevitable."

Mount Washington Record.

Seven hundred miles in eight days, with a record breaking ascent of Mount Washington as a part of the tour, was driven by D. W. Comstock, an Ivoryton, Conn., man recently. He left Ivoryton, and passing Hartford, reached Boston, a distance of 137 miles, the same day. From Boston he went from Portsmouth, N. H.; thence to Portland, Me., and then by way of North Conway to the old Glen House. He returned from Mount Washington by way of Bethlehem, Profile, Plymouth and White River Junction; thence following the Connecticut River back to Ivoryton. The trip from Bellows Falls, Vt., to Ivoryton, about 140 miles, was made in one day.

The run from the old Glen House to the top of Mount Washington was made in less than fifty minutes. the distance being eight miles and the rise 5,000 feet. Breakfasting at the summit, Mr. Comstock made the return immediately, in order to avoid teams. The descent was made in forty minutes.

The average time consumed by a team in making the ascent by the same road is from three and a half to four and a half hours. This was the seventh ascent of Mount Washington by automobilists, and by far the quickest.

Licensing not Infallible.

"The French system of licensing the driver, which has been held up as a sure preventative of accidents by some journals, is not infallible," says an automobilist who has driven much in that country.

"The fact that a man is licensed in France to drive simply means that he has a working knowledge of the handles to be moved, and a slight acquaintance with the general mechanism. The only real guarantee of safety is common sense, and an instinct of caution, assisted by a natural or acquired aptitude of judging distance and speed. No government examination or regulations in the world can give these qualities.

"On the other hand, we should not become alarmists about motor car accidents, for they are very few and far between, taking into consideration the number of miles run. No one would think of giving up railway travelling because a bad collision or derailment occurred, and the general public should remember that motor car accidents are rare compared with disasters to horse drawn vehicles. In the hands of an average man of sense a motor car is as safe, as, if not safer than, any other vehicle."

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The Week's Patents.

709,483. Tire and Fastener for Vehicle Wheels. Jacques C. Haines, Chicago, Ill., assignor of two-thirds to William E. Huber and Chester Haines, Chicago, Ill. Filed March 10, 1902. Series No. 97,392. (No model.)

Claim.—1. A tire fastener comprising a channel rim, an elastic tire within the channel of said rim, a series of fastening members partially embedded in the tire and projecting therefrom, adapted to be brought into contact with the bottom surface of said rim, and binding wires engaging and adapted to draw said projecting portions into contact with the bottom surface of said rim.

709,485. Induction coil. John O. Heinze, Jr., Revere, Mass. Filed July 11, 1902. Serial No. 115,160. (No model.)

Claim.—1. An induction coil made up of two or more separate magnetic cores; a primary coil surrounding the said cores and having as many sections as there are cores; a continuous insulating mass surrounding said primary coil and cores; a secondary coil wound about said insulating mass, and consisting of as many sections as there are cores or sections in said primary coil.

709,546. Vehicle wheel. George S. Lee, Hawthorne, N. J. Filed January 27, 1902. Serial No. 91,408. (No model.)

Claim.—1. The combination with a hub, spokes and rim rigidly connected together, of a pneumatic tube on said rim, a tire on said rim adapted to have an eccentric curvilinear motion around the rim within a limited range to compress said tube, and stops on the rim to limit the range of motion of the tire.

709,598. Electric Igniter for Explosive Engines. Howard A. Gray, Plainfield, Ill. Filed October 1, 1901. Serial No. 77,210. (No model.)

Claim.—1. In an explosive engine, in combination, a cylinder, a pair of intermittently contacting igniting electrodes one of which is rotable, means for rotating said electrode, a charge controlling valve, means for actuating the valve, a governor for interrupting the action of the valve, and an adjunct of the valve-actuating means engaging the electrode-rotating means to hold the rotatable electrode against movement.

709,611. Secondary Battery. William L. Silvey, Dayton, Ohio. Filed February 8, 1902. Serial No. 93,175. (No model.)

Claim.—1. In a secondary battery the combination of a battery plate having supporting ears with a lug on one of the ears, a bolt passing through the lug and provided with a screw-thread, a nut for clamping the bolt to the lug, an equalizing bar, the bolt extending into the equalizing bar and nuts for clamping the equalizing bar and the bolt together independent of the lug as set forth.

709,655. Method of Superheating Steam. Hosea Webster, Montclair, N. J. Filed December 12, 1901. Serial No. 85,554. (No model.)

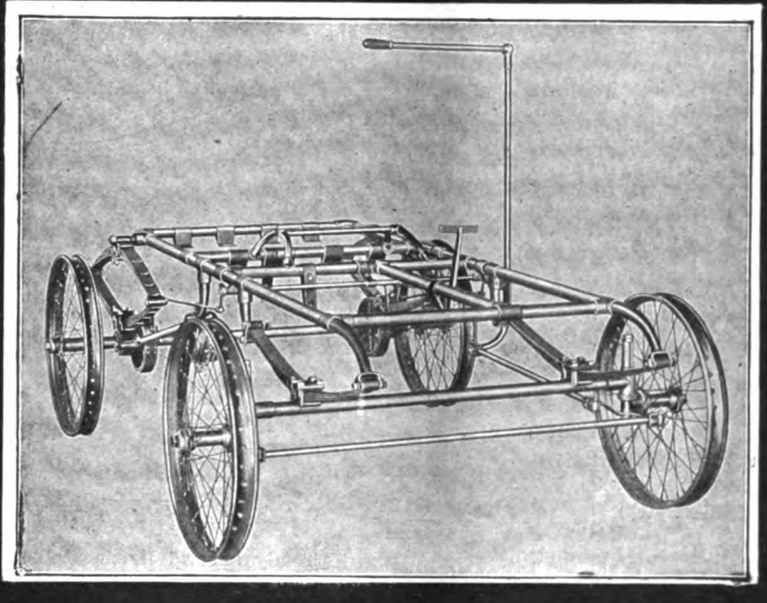
Claim.—1. The method herein described, consisting in superheating steam, primarily by the heat of the combustion in the generator, and then augmenting the temperature of the steam superheated, by a separate and independent source of heat, as set forth.

709,681. Safety Device for Motor Vehicles. Andrew L. Riker, New York, N. Y., assignor, by mesne assignments, to Morton Trust Company, trustee, a Corporation of

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New York. Filed March 2, 1900. Serial No. 7,119. (No model.)

Claim.—1. In a motor vehicle, a motor, a driven road wheel, intermediate transmission mechanism and a clutch between said transmission mechanism and the motor, means under the control of the occupant to apply and disconnect the clutch to propel the vehicle, and automatic means to release said clutch upon rising of the occupant from the seat of the vehicle.

709,682. Rotary Slide Valve for Pumps, Compressors or Motors. Louis Roedel, Passaic, N. J. Filed March 24, 1900. Renewed June 10, 1902. Serial No. 111,006. (No model.)

Claim.—1. The combination, with a stationary cylinder having interior inlet and outlet channels, of a rotary slide valve at the head of said cylinder, a shaft connected at one end with said valve, means for imparting rotary motion to said shaft, and a balancing device arranged at the opposite end of said shaft, substantially as set forth.

709,684. Steering Device for Automobiles. Gustav R. Schlumberger, Allegheny, Pa. Filed February 21, 1902. Serial No. 90,696. No model.)

Claim.—In a steering apparatus of the type set forth, the combination of a vehicle body and a cross piece carried thereby with hollow standards interposed between said vehicle body and cross piece, rods turnably secured within said hollow standards and carrying collars at their upper ends engaging the vehicle body, right angular extensions rigidly secured to the lower ends of said rods and engaging the under face of the cross piece, sleeves formed integral with the depending portions of said extensions with wheeled axles mounted in said sleeves, the inner ends of said axles extending beyond said depending portion of the extension and carrying knuckle joints and a connecting rod secured to the upper rods, substantially as described.

709,690. Variable speed and Reversing Gear. Henry J. Westover, Mount Vernon, N. Y., assignor to H. Ward Leonard, Bronxville, N. Y. Filed August 30, 1901. Serial No. 73,778. (No model.)

Claim.—1. In a variable gear, the combination with the driving and driven shafts, of a clutch for making direct connection between said shafts, a lower speed gear for connecting said shafts around said clutch, a lever for shifting one member of said clutch, a cam for controlling the movements of said lever, and a shifting mechanism for placing said lower speed gear into and out of mesh with the driving and driven shafts, substantially as set forth.

709,719. Steam Engine. Agricole P. Moresi and Henry J. Bergeron, Jeanerette, La. Filed April 30, 1902. Serial No. 105,365. (No model.)

Claim.—1. A steam engine embracing a revolving piston cylinder, a crank, whose axis is eccentric with the axis of said cylinder, a bent arm connection between said crank and the piston rod of said cylinder, said arm connection having its bent or right angled terminal connected radially to said crank, and means for supplying pressure to said cylinder, substantially as set forth.

709,838. Means for Preventing Road Vehicles from Slipping Sidewise. Edmund T. L. Williams, London, England. Filed July 22, 1902. Serial No. 116,570. (No. model.)

Claim.—1. A device for the purpose specified, comprising a roller having a conical running surface, a sharp edge at the end of said conical surface, a bearing for said roller, and a swing arm carrying said bearing, substantially as described.

Experimenting With a Horse.

This is the story of an automobile and a horse, and it will occasion little surprise to learn that the former came out second best. As a matter of fact, no other result could be looked for, now that the motor vehicle is admitted to be a "good mark" for everybody who wants to take a shot at it.

"The horse had long trod nervously under the modern blight of its race, the ignoble fear of automobiles. Every time the animal saw one of the vehicles it appeared to be suddenly smitten with a species of fence or tree climbing madness. The mere sight of an automobile in its most quiescent state inspired the animal with fear.

"His owner determined to rid his horse of its foolish fear, and he concluded that the best way to do it was to introduce the horse so some representative automobile and get the animal thoroughly broken. The introduction was pulled off according to schedule, but it wasn't the horse that was broken. A friend offered his new automobile as an object lesson. The horse was taken close to the machine for a long look. He gave it the look at close range, and then rose into the air like another Pegasus.

"When it came down it came down on the automobile, and then began a kicking match in which the automobile realized its utter horselessness. The horse landed on one of the front wheels and the tire burst with a report like a cannon shot. Then it turned around and brought both hind feet into play. The automobile was whacked and banged and slammed around till it was a wreck, and the experiment was over."

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Already shrewd livery stable men object to hiring a horse to drivers who are used to employing automobiles for their outings. The liverymen's explanation of their avoidance of automobile trade is simplicity itself. They say that when a man has become accustomed through the use of a motor vehicle to have almost unlimited speed and power at his command at all times, he forgets when he returns to driving a horse that muscles cannot stand what motors can. Unconsciously the automobilist forces the animal to keep a speed and to go a distance which it cannot do with safety. The wise liverymen know this, hence their disinclination to intrust the animal to the unthinking motorist.

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London.—Two cases motor vehicles and parts, $946.

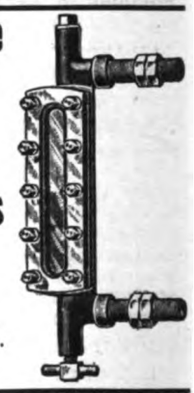
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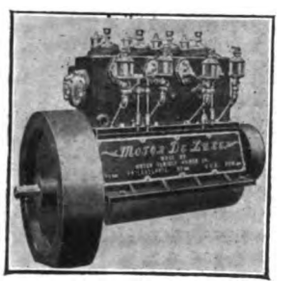
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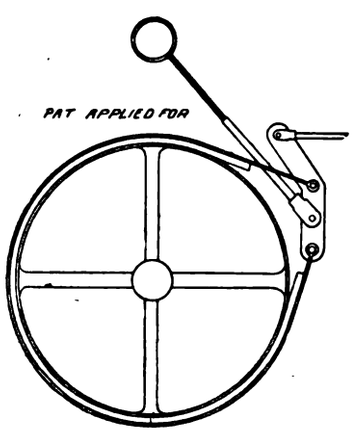
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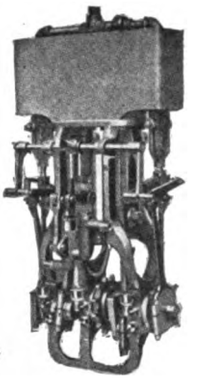
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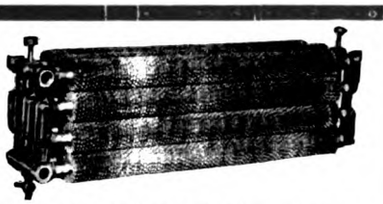
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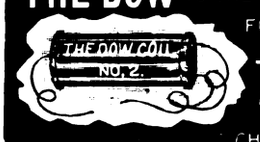


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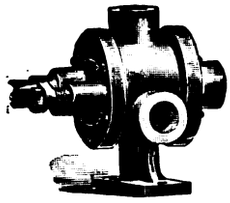


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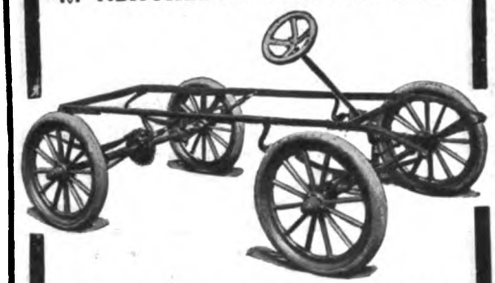
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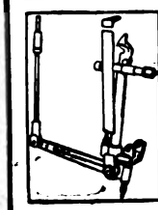
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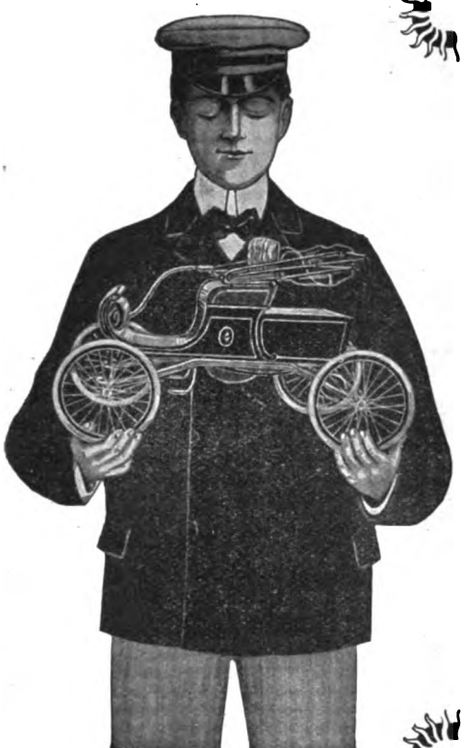
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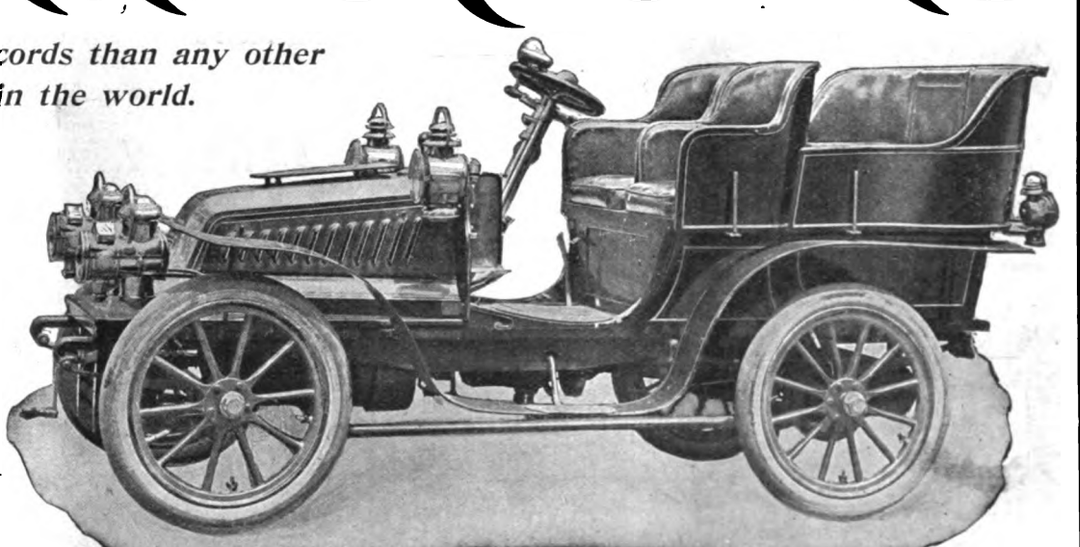
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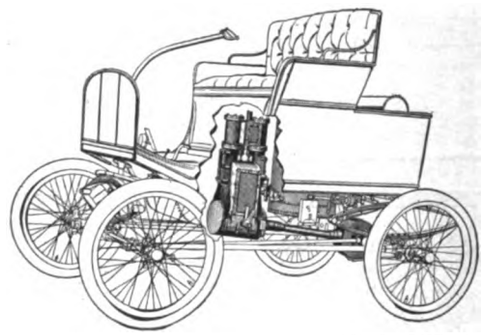
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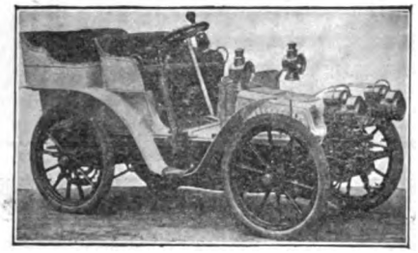
PHILADELPHIA, Allegheny Ave. and 19th St. NEW YORK, 100 Broadway. BOSTON, 60 State St.
CHICAGO, Marquette Building. BALTIMORE, Continental Trust Building, CLEVELAND, New England Building.
ST. LOUIS, Wainwright Building. SAN FRANCISCO, Nevada Block. DETROIT, Michigan El. Co., 101 Woodward Ave.
HAVANA, CUBA, G. F. Greenwood Mgr., 34 Empedrado St.

FRENCH AND AMERICAN AUTOMOBILES.

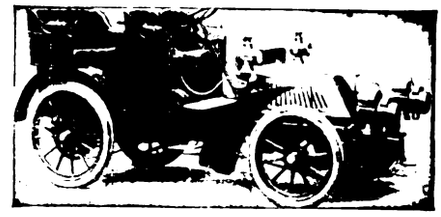
Agents for THE ELECTRIC VEHICLE CO.

SOLE DISTRIBUTING AGENTS FOR Peugeot—Mors—Cottereau.

10-H.P. NEW PEUGEOT
4 Cylinder Front.
BLUE RIBBON WINNER
Long Island Endurance Test.



8-H. P. MORS.



10-H. P. PEUGEOT.

REPAIRS. The Central Automobile Co. 1684 Broadway. Telephone: 596 Col STORAGE.

OPEN DAY AND NIGHT.

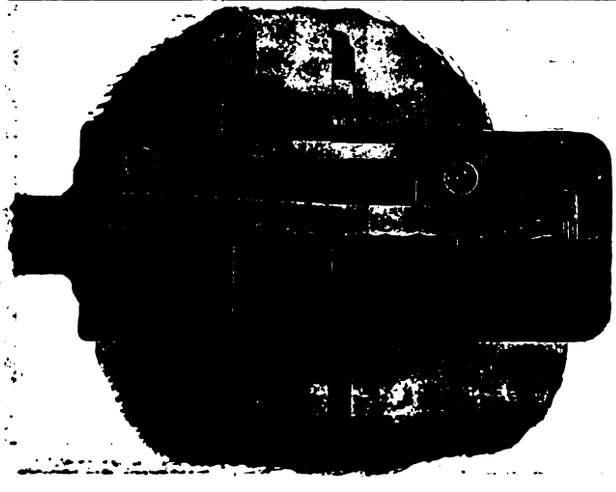
Prompt Deliveries of 5 AND 10 H. P. PEUGEOT, 8 AND 15 H. P. MORS.

Prompt Deliveries of 10-H. P. COTTEREAU AND ELECTRIC VEHICLE COMPANY'S ELECTRICS.

LARGEST AND BEST EQUIPPED AUTOMOBILE DEPOT IN THE UNITED STATES.

ALL KINDS OF FRENCH AUTOMOBILE PARTS KEPT IN STOCK.

ELECTRICS CHARGED AND KEPT IN FIRST-CLASS ORDER.



Artillery Wheels.

We are now prepared to furnish these Hubs, Ball-Bearing and Key-Seated, for Automobiles weighing from 500 to 4,000 pounds.

Front Hubs are Ball-Bearing and are assembled on our well-known Steering Axles.

Rear Hubs furnished with Ball-Bearings or Key-Seated.

ALL RACES ARE GROUND IN POSITION IN HUBS. CONES AND CONE SEATS ON SPINDLES ARE GROUND TO GAUGE.

Hubs and Spindles are machined Right and Left.

WRITE US REGARDING YOUR REQUIREMENTS.

THE AMERICAN BALL-BEARING COMPANY, Cleveland, Ohio, U.S.A.

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WORLD'S RECORD.

MUNGER

NON-COLLAPSIBLE

PNEUMATIC TIRES.

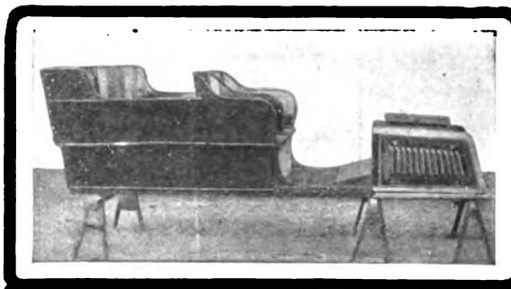


One Mile,

1:09 3-5.

CAN YOU BEAT 'EM?

MUNGER AUTOMOBILE TIRE CO.,
TRENTON, N. J.



ALUMINUM

Automobile Bodies, Fenders *and* Bonnets

BUILT and REPAIRED

J. M. QUINBY & CO.

Carriage Builders NEWARK, N. J.

Are You Right?

Do you think that you can make a specialty as good and as cheap as a specialty manufacturer?

Take a Think!

OUR SPECIALTY IS

AUTOMOBILE WHEELS.

WIRE OR WOOD EITHER, ON SAME AXLES.

ANY DIAMETER, FOR ANY SIZE TIRE, FOR ANY WEIGHT VEHICLE.

SEND US YOUR SPECIFICATIONS AND SEE.

WESTON-MOTT COMPANY, Utica, N. Y.

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VICTORIOUS AT HOME AND ABROAD.

The White Steam Carriage

WINS OUT IN ENGLAND'S RELIABILITY CONTEST.

True to its former showing made in this country, a WHITE STEAM CARRIAGE completed the 650 miles test with

AN ABSOLUTELY CLEAN RECORD,

being one of two out of seventy entries to achieve this distinction.



The conditions of this run were unusually severe, the competing vehicles being required to make five separate journeys over different routes, and submit to brake contests and hill climbing trials.

The WHITE STEAM CARRIAGE used was a six horse power vehicle taken from stock and not only scored

1800 POINTS OUT OF A POSSIBLE 1800,

but demonstrated its fuel economy by using only 13 quarts per day.

Both its track records for speed and its road records for reliability prove that

THE WHITE IS A THOROUGHBRED.

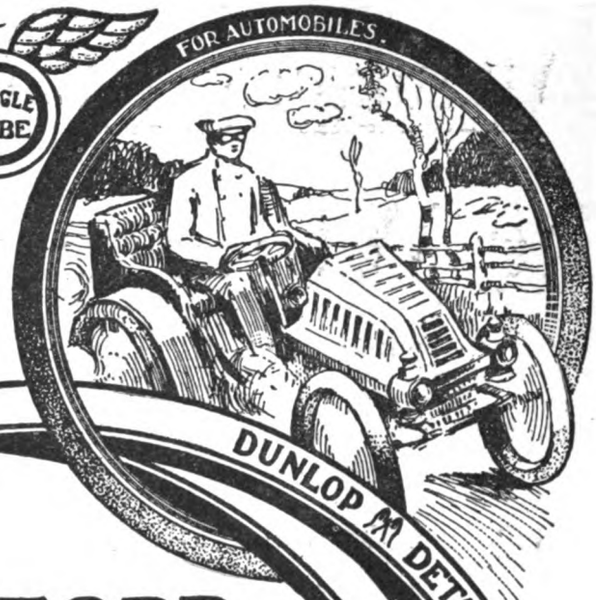
WRITE FOR FULL PARTICULARS, INCLUDING PROF. THURSTON'S REPORT ON OUR STEAM GENERATOR, AND THE OFFICIAL REPORTS OF IMPORTANT ENDURANCE CONTESTS.

WHITE SEWING MACHINE CO., (Automobile Department) Cleveland, Ohio.

22 Union Square, New York, N. Y.
609 Main Street, Buffalo, N. Y.
509 Tremont Street, Boston, Mass.
12 Woodward Avenue, Detroit, Mich.
300 Post Street, San Francisco, Cal.
300 Rose Bldg, Cleveland, Ohio.

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HARTFORD
and
DUNLOP TIRES

Have Stood Pre-eminently Foremost Since the Introduction of Pneumatic Tires

Few devices have been the subject of a greater inventive faculty or more persistent and successful exploitation, and few have reached such a high state of development.

They Never Vary in Quality or Workmanship Because They Cannot Be Made Better or of Better Materials

If the BEST is none too good for you, it will pay you to adopt these widely and most favorably known tires. Every user is bound to be satisfied with them.

True Economy Represents Buying the Best Wherever You Can Find It

THE HARTFORD RUBBER WORKS COMPANY

Hartford, Conn.
U. S. A.





THESE ARE THE ONLY TOOLS YOU WILL NEED

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, October 9, 1902. No. 2

BOSTON HEGIRA BEGINS

Eighty Entrants for This Mornings Event in Hand—Everything in Readiness.

Arrangements for the Reliability Contest of the Automobile Club of America are practically completed and everything is ready for the start, which takes place at 9 o'clock this (Thursday) morning.

The work of weighing and sealing the cars and suppling them with their numbers were begun Tuesday and continued all day Wednesday. The owner of each car was required to report at the club rooms, Fifth Avenue and Fifty-eighth street, and undergo these necessary preliminaries. Some few changes in classification, owing to excessive weight, will probably be made, but at this writing it is impossible to say how many cars will be thus affected.

Two additional entries have been accepted, which brings the total up to 80. The entries referred to are an Oldsmobile, entered by H. B. Shattuck & Sons, and a Fournier-Searchmont, entered by Whitney Lyon. It is expected that there will be very few, if any, non-starters, and that the number of these will be almost the same as it was in the Buffalo run of last year.

Secretary Butler of the club returned a few days ago from a last trip over the route. He made the final arrangements for the control of stations, the marking of the course with the different colored flags, noon-day and night stops, etc.

Observers have been assigned to all the cars. The applications for these posts largely outnumbered the vehicles entered, and a number of persons were disappointed. The committee in charge of the run, Messrs. Scarritt, Chamberlin and Hill, made the selection, which was not by lot. Members of the club have, in a number of cases, been selected for these duties.

Each driver and each observer will be supplied with an official program. This is contained in a carefully compiled and well-printed book, similar in shape and make-up to the program of last year. It contains complete instructions for the contest, maps of the route, lists of hotels and repair and supply stations, itinerery, maps, etc., together with a number of ruled pages designed to contain the official reports of the observers. The book is a veritable vade mecum, and with it in his possession no driver can well go wrong or be at a loss.

The tour will consume seven days, six en route and a day of rest at Boston. New Haven, Springfield and Boston are the night controls on the outward trip, and Springfield and New Haven on the inward one.

Some twenty automobiles took part in a parade and run of the Automobile Club of Hartford, Conn., on Saturday last. New Britain was the destination of the party, dinner being taken there and the return made in the evening.

Daimler Will go to Bayonne.

It is authoritatively announced that the Daimler Mfg. Co., Long Island City, N. Y., has purchased land at Bayonne, N. J., and will remove its plant there.

Rumors that such a move was in contemplation have been in circulation for some little time. Upon inquiry made of the company, the Motor World was informed that there was no information to be given out at the present time. On Thursday last, however, the Board of Directors met and decided to make the purchase, negotiations for which had been in progress between its owner and President Allen of the Daimler Co.

"The intention of the company is to remove its plant from Long Island City as soon as the required changes can be made, and manufacture automobiles and launches at the new location. The necessary buildings will be commenced in due course," said President Allen, in reply to the Motor World's inquiry.

Originator Will Retire.

Edward A. Archibald, president and manager of the Archibald Wheel Co., Lawrence, Mass., has sold his entire interest in the concern and will retire from business. The Archibald Co. was the originator of the celebrated artillery wheel, now so much used on automobiles. Mr. Archibald was the founder of the company and the inventor of the wheel.

BASEMENT FILLING UP

Diagram Ready and Applications Being Received by Garden Management.

As the Motor World last week stated would be the case, the Madison Square Garden management has added the basement of the building to the space given for exhibition purposes. The area has been marked off and a diagram showing the spaces offered for sale prepared. The spaces number twenty-six, and of these applications for six have already been received.

It has been decided by the management to reconsider its decision not to admit motor bicycles to the show. A strong protest was made against this rule, and the result has been its withdrawal. Space owners will be permitted to exhibit machines of this kind, just as they were at the two previous shows.

Eleven additional entries have been received since last week. They are as follows:

Rose Manufacturing Co., Philadelphia, Pa.
G. & J. Tire Co., Indianapolis, Ind.
Twentieth Century Manufacturing Co., New York.
Ajax Motor Vehicle Co., New York.
General Automobile and Manufacturing Co., Cleveland.
Auto Supply Co., New York.
Lane Motor Vehicle Co., Poughkeepsie, N. Y.
R. E. Dietz Co., New York.
Champion Manufacturing Co., Brooklyn.
H. H. Franklin Manufacturing Co., Syracuse, N. Y.
Buckmobile Co., Utica, N. Y.

Absorption in Logansport.

A consolidation of the Rutenber Mfg. Co. and the Logansport Foundry Co., both of Logansport, Ind., has taken place. A new company, under the name of the Western Motor Co., has been formed, with $400,000 capital, and it has taken over both the older concerns. It is stated in the incorporation papers that $125,000 was paid for each.

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WAR OF THE VELOS

Rival Hill Climbs Promoted by These Journals—Deauville Timing Muddle.

French Bureau Motor World,
2 Rue d'Abbeville.

Paris, Sept. 26.—If competition has a stimulating effect upon business it is capable of making a pretty mess of automobile events, to judge from the poor results of the Gaillon hill climbing tests on Sunday last. The competition was first organized four years ago by the Vélo, and it at once took rank among the biggest tests of the year, but since that time things have undergone a good many changes, including the influence of the organizing journal itself, which no longer enjoys the monopoly of representing the automobile interest. The Vélo made the mistake of running in opposition to the Automobile Club and of publishing its celebrated manifesto against automobile racing, with the result that it was found necessary to provide an antidote against the ravings of this paper, and the Auto-Vélo sprang into existence, under the ægis of the Automobile Club. This latter journal has been conscientiously dealing sledge hammer blows at its ancient rival, and has in fact "jumped its claim" by forestalling the Vélo in the organization of tests, so that the different events which were inaugurated by the older paper have been passing into the hands of the new one. The climax has just been reached in the matter of the Gaillon tests. The Vélo announced them in the usual way for October 5. The Auto-Vélo then set to work to promote tests on the same day at Chateau-Thierry and another test at Gaillon the following Sunday, so that while it was hoped to draw custom away from Gaillon to Chateau-Thierry, it was intended to show that the real Gaillon test was the second one under the management of the Auto-Vélo. It looks as if this journal has succeeded in its attempt.

After what we had been accustomed to in former years, the lack of support given to the Gaillon meeting was very disappointing. To avoid the threatened competition the date had been altered to Sunday last, but this did not prevent makers from holding aloof, and only twenty vehicles competed, including a dozen motocycles. The Gaillon hill lies on the main highway to Rouen, about fifty miles from Paris. The gradient is a straight one, having a length of a kilometre, and the incline for two-thirds of the way varies from 8 to 9½ per cent, and for about two hundred yards it easies off to the finish. If it had not been for the presence of the two Serpollet cars—the only big vehicles competing—the meeting would have fallen very flat indeed, but it was redeemed by the wonderful performances of the steam vehicles, which again showed that on short hills there is nothing to compete with them in gasolene cars. The light Darracq, driven by Baras, was supposed to have done something remarkable when it went up the kilometre gradient in 46 seconds, which is a long way inside the Gaillon record, but when Le Blon drove his Serpollet up in 40 3-5 seconds, or at the rate of about 55 miles an hour, the success of the gasolene vehicles appeared hopeless. M. Serpollet himself followed with the "Whale," and he seemed to be doing still better on the lower part of the hill, but he mistook the ridge for the finish, and slowed down before reaching the timekeepers, though his time of 41 2-5 seconds is still a remarkable one. Serpollet carried off three events, the big and light carriage records, as well as the gold medal offered by the Minister of Agriculture for the fastest car using alcohol.

On Sunday there is to be held the Chauteau-Thierry test, and in the following week another competition at Gaillon, for each of which about 150 entries have been received, and, after the failure of last Sunday's test, it is probable that in future the Vélo will leave the work of organization alone, and we shall thus again be having only one meeting at Gaillon and another at Chateau-Thierry, it is to be hoped at wider intervals than at present. Makers will evidently not care to take part in three meetings on three consecutive Sundays.

The muddle made with the timing arrangements at Deauville has called attention to the necessity of employing some mechanical means of time taking so as to secure absolute accuracy in the results and at the same time split up the seconds in tenths. In long distance racing the difference of a fifth of a second is, of course, of little importance, and the human timekeeper cannot very well be improved upon for clocking vehicles under these conditions, but now that the difficulty of getting permission for long distance races has compelled makers to confine themselves largely to kilometre record attempts, it is by no means easy to insure that the results are absolutely correct. The experience at Deauville has in fact shown that the ordinary methods of timing fast vehicles over short courses cannot be relied upon, and, whether it is done properly or not, there will always be some doubt as to their accuracy. If the records are to be beyond suspicion they must be clocked electrically or mechanically. Moreover, automobiles nowadays are capable of running at such terrific speeds in tests that the fifth of a second, so far from being a negligible quantity, actually makes an appreciable difference, which is something like eight yards when going at 75 miles an hour. Eight or nine metres in a thousand metres is something to be taken into account, and it is therefore proposed to use watches recording the tenth of a second. No man, however, would be able to stop his watch on the tenth with the absolute certainty of the time being correct, and for kilometre tests he must therefore be replaced with mechanical means of stopping the watches.

The first test with electrically clocking cars was made at Nice two or three years ago, when an installation was laid down by M. Louis Mors, but the system has failed to come into vogue, whether on the score of cost or inefficiency we are unable to say, and a very satisfactory, though complicated, form of electrical timing was adopted at Vienna during the kilometre tests in July last. Here again the expense was too great to warrant the system being used generally. M. Serpollet has this week been experimenting with another device, purely mechanical, which has the merit of great simplicity, and if it gives the results expected of it there ought to be no difficulty in employing it for all the short speed tests. The watch recording tenths of seconds is placed in a rubber case, which is fixed rigidly, and above the button is a lever kept back by a spring. To the end of the lever is attached a string, which is stretched tight across the road at the required height. As the car passes the string is depressed and pulls down the lever on the button of the watch. Evidently nothing could be simpler than such an arrangement. But the question arises whether the car would not give two distinct movements to the lever and thus start the split seconds again as soon as they are stopped. Possibly this would not be the case on a fast vehicle, because as soon as the string is depressed by the front wheels the back wheels would be on it in less than the twentieth part of a second, during which time the string would

Reindeer Coat From France.

Mindful that autumn winds are piercing the fair automobilist shows renewed interest in fur garments. The one shown is made of reindeer skin, and if looks count



for anything it is almost blizzard proof. Enveloped in its ample folds the elements possess little terror for its wearer, and riding can be indulged in with comfort much beyond the usual period.

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not have had time to rise sufficiently to allow the lever flying back. This, however, is a matter that can only be proved by experiment, and any such difficulty may possibly be avoided by altering the tension of the spring. In any event, it is clear that with the cutting of records so fine, and the speeds at which cars now run, mechanical or electrical timing with watches recording tenths of seconds has become a necessity, and now that the need for some such system has become imperative there is no doubt that a means will soon be found of supplying the requirement.

The way in which new "inventions" are cropping up is really astonishing. It was recently stated in this journal that "a German engineer has found a new transmission which should make gear changing unnecessary," and then a description is given of the alleged invention, consisting of two disks operating at right angles to each other, so that any speed is obtained by moving one of the friction disks between the centre and periphery of the other. This is a very old friend, indeed. It is almost as old as the automobile, and was one of the first devices thought of by motor car engineers for simplifying the driving gear. We remember seeing it many years ago when it was first brought out by M. Lepape, who thought that he had suppressed all change speed gearing, but he soon found that the system gave him endless trouble, besides being a great source of loss in transmission. The loss of power with these friction cones is far in excess of that of any well lubricated gearing. The system is impracticable, and, though now and then we find new firms trying to modify this method of friction transmission in light cars, such systems are always abandoned. The German engineer would do better to try his hand at something else.

The taxing of automobiles has one good result—it gives us an opportunity of learning how many vehicles are in actual use, or, rather, the number that were in use a year ago. The official returns, just published, show that 5,386 automobiles were declared for taxation in 1901, and of these 1,149 were in Paris, this figure being made up of 398 two seated cars and 751 vehicles with more than two seats. Of those in the country there were 2,095 with two seats and 2,142 with seats for more than two persons. The aggregate nominal horsepower declared for all these cars was 26,427, and the amount raised by the taxes was $84,209. It is certain that during the present year these figures have been considerably increased, but we shall not know exactly to what extent until the end of 1903.

Will Make Runabouts.

Matters have progressed so far with Hibbard & Bush, who have been endeavoring to establish an automobile factory at Fond du Lac, Wis., that their plans are ready to be made public. They will manufacture a 5½ horsepower runabout, with reachless running gear, to sell for $650.

SMOKY CITY ORDINANCE

Fixes Speed Limits at 6 and 10 Miles—Will be Opposed by Local Autoists.

It is little wonder that the ordinance regulating the use of automobiles introduced in the Pittsburg (Pa.) council has aroused hostility. Six miles in the business portions of the city and ten in the outlying sections are the maximum speeds permitted. For the violation of the provisions of the ordinance fines up to $100 may be levied. It need scarcely be said that a determined fight will be made against its passage. The ordinance in full follows:

An ordinance, regulating the rate of speed at which automobiles, locomobiles and all self-propelling machines shall be operated or propelled upon the thoroughfares within the limits of the city of Pittsburg.

Section 1. Be it ordained and enacted by the city of Pittsburg, in Select and Common Councils assembled, and it is hereby ordained and enacted by the authority of the same, That from and after the passage of this ordinance no automobile, locomobile or other self-propelling machine of whatever kind or character shall be driven, propelled, operated or run at a greater speed than six (6) miles an hour along and within the streets, avenues and alleys in the territory bounded by Water, Grant, Eleventh streets and Duquesne Way; or when making crossings anywhere within the limits of the city of Pittsburg on any intersecting streets, avenues or alleys where there are car tracks on either or both of such intersecting streets, avenues or alleys; and at no greater speed than ten (10) miles an hour along or on any and all streets or alleys, avenues or boulevards, public highways or thoroughfares within the limits of the city of Pittsburg.

Sec. 2. That any person, or persons, violating any of the provisions of this ordinance shall be subject to summary arrest, and upon conviction shall be subject to a fine or penalty of not less than twenty-five ($25) dollars, nor more than one hundred ($100) for each and every offence; said fine to be collected in the manner provided for the collection of fines and forfeitures in an ordinance entitled "An ordinance relative to the collection of fines and forfeitures," approved December 7, 1876.

Sec. 3. That any ordinance or part of ordinance, conflicting with the provisions of this ordinance, be and the same is hereby repealed, so far as the same affects this ordinance.

Eight and Ten Mile Speeds.

An ordinance introduced in the lower house of the Kansas City, Mo., city councils last June, and held over without action, is to be taken up again. Its principal provisions are as follows:

"No person shall ride or drive, or cause to be ridden or driven, any bicycle, tricycle, tandem bicycle, automobile, locomobile, horseless carriage, or any other vehicle propelled by foot power, steam, gas, gasolene or electricity, on or along any street, alley, avenue, boulevard, highway, park or other public place within the following district in this city at a greater rate of speed than eight miles an hour, to wit, a distance bounded on the north by Fifth street, on the west by Hickory street, on the south by Nineteenth street, and on the east by Cleveland avenue; nor on and along any other street, alley, avenue, boulevard or highway, park or other public place within the limits of Kansas City outside of said district at a greater rate of speed than ten miles per hour."

The second clause required that all horseless carriages should carry a light in front at night. The third clause made the violation of the ordinance a misdemeanor, punishable upon conviction by a fine of from $1 to $500.

Alcohol and Other Tests.

For the month of October the most prominent French fixture scheduled is the "Circuit de l'Herault a l'Alcool," which will be held on the 12th. It is to be a sort of reliability trial, with the object of popularizing the employment of alcohol for propelling motor cars, and in addition to this will be a test of consumption of fuel, of the general efficiency of the machines, of their hill climbing and brake powers, of their comfort and elegance, and lastly of their speed over a measured kilometre.

The judging will be done in an ingenious manner. The car which is classed first in one particular virtue will have given to it as many marks as there are cars in the category to which it belongs, the car that is next best will receive one mark less, and so on. The same will be done for every particular virtue, and then the marks in each case will be multiplied by the following coefficients: Consumption of fuel, coefficient, 10; regularity of running, coefficient, 8; hill climbing capabilities, coefficient, 5; comfort and elegance, coefficient, 5; speed (over the kilometre), coefficient, 2.

The car that obtains the greatest total of marks will be, of course, the winner. There are many prizes to be competed for in the way of medals and bronzes.

Schooling Horses in Kansas City.

Members of the Kansas City, Mo., Automobile Club are actively interesting themselves in the matter of accustoming scary horses to the presence of the motor vehicle.

The club has adopted a resolution by the provisions of which a member will be delegated to take his automobile out on the boulevards each Wednesday for an hour or two and operate it to accommodate horse owners.

Patterson & Shaw, 58 Schermerhorn street, Brooklyn, have been succeeded by Alfred B. Harrington.

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YALE MAKES ITS BOW

New Touring Car With Many Good Features Comes From Toledo.

"Good old Yale" has a worthy bearer of its name in the new "Yale" tourneau touring car just brought out by the Kirk Manufacturing Co. of Toledo, Ohio, makers of the famous Yale bicycles.

While it has been known for some time that the well-equipped Kirk Manufacturing Co. were at work on a gasolene vehicle, the appearance of the car at a well-known Chicago agency created something of a sensation in Windy City automobile circles. And well it might, for seldom, if ever, has the initial effort of any concern been so good.

Finished in Yale blue and black, with yellow running gear, symmetrical and graceful in design and general appearance, the Yale car at once attracts the eye, and holds it.

That it is as good as it looks was so quickly demonstrated that the first car that reached Chicago was gobbled up on the very day it made its appearance there.

The engine is of the double cylinder horizontal opposed type, 4½x4½ stroke and bore, and develops, so its makers prefer to state, power enough to drive the machine anywhere. Nominally they mention "8-horse power and some more," and, as Ezra E. Kirk picturesquely adds, "that 8-horse power isn't canary bird or mice power, either."

A strong feature of the machine is the accessibility to the engine, a small paneled door on either side affording ingress to all parts, while the body being divided, the removal of four bolts permits it to be taken off altogether.

The operating is simplicity itself, two speeds forward and a reverse are provided for, and in the high speed the car is practically noiseless.

In a trip through the factory to-day a Motor World man was privileged to see the cars in all stages of construction. The works of the Kirk Manufacturing Co. are very complete, including a large drop forge shop, and consequently they are manufacturing almost everything themselves.

The automobile department is under the superintendency of Mr. George Trout, who is the inventor and designer of the car, and who, it will be remembered, last year brought out a runabout at Detroit that attracted much attention.

The system that has made the Kirk Manufacturing Co. successful in their various lines of manufacture already extends to the latest addition, and everywhere there is an orderly arrangement apparent, work progressing from one operation to another and in the assembling room in character and extent suggesting uniformity and interchangeability throughout.

From the assembling room, which is in the second story, to the yard there is a 20 degree runway, on which every car is sent down and up, being stopped and started at any point at will. The Kirk company lay much stress on the hill-climbing and efficient braking features of the Yale car, facts which speak for themselves.

While there will be no attempt to produce large quantities of machines this year, a fair number are coming through, enough to entitle the makers to be classed among the "actual manufacturers."

A cut of the car will appear in an early issue of the Motor World.

Slippery Street Causes Trouble.

So systematically has the flooding of Fifth avenue, this city, by watering carts been going on for some time that the Automobile Club of America, through its board of governors, has been impelled to protest against it.

The slippery condition of the asphalt makes travel dangerous for horses. Especially is this so on grades, where it is impossible to stop quickly, or near intersecting railway tracks.

There has been a general belief that the blame lay with the Street Sprinkling Association, which has the contract for spraying the streets of the city; but it is shown that the blame should be shared by the Street Cleaning Department.

Commissioner Woodbury has devised a new plan for cleaning the city's famous thoroughfare. He gives it a wet instead of a dry cleaning; under his direction, patent trucks, sending out swift streams of water, course the avenue twice a day. These streams are intended to be swift enough to take off the dirt and remove the gummy, slippery coating which results from a slight wetting, such as a sprinkler gives.

"I am trying to put into effect here the Paris method of cleaning the streets," said Commissioner Woodbury recently. "I am now having a truck made, which will give fifty atmosphere pressure; and I purpose to follow this and others with rubber sweepers. This method will give a perfectly clean surface. The trouble now comes from the street sprinklers. On October 15 the sprinklers will make their last voyage through the avenue, and after that automobilists will have no cause for complaint."

Will Use the Cinematograph.

At the approaching Paris Automobile Salon a novel idea is said to be contemplated. It is to make use of the cinematograph for the purpose of giving representations of certain automobiles. A number of manufacturers will form a combination to go into the scheme, and in this way the expense, which would be too great to be borne by one, will be divided.

Each car will be shown stationary, running, and in parts, and the particularly interesting points of all will be explained by an attendant, who will also distribute literature to those who express a desire to know more about a certain construction.

UNGER WILL FIGHT

Newark Man Carries Speed Arrest Case to New Jersey Supreme Court.

Reference was made some weeks ago to the determined stand made by Herman Unger, of Newark, N. J., who was arrested at Scotch Plains for exceeding the legal rate of speed in Fanwood township. It was shown that by the admission of the local officials the speed complained of was a reasonable one.

It now appears that the accused is determined to fight the case to a finish. In consequence, the Supreme Court of New Jersey will be called upon to decide whether a municipality has a right to make laws singling out automobiles from other kinds of vehicles and fix a special limit for their speed.

Mr. Unger was to appear before Justice Clark, of Scotch Plains, to answer to the charge, but his attorneys, Reed & Coddington, obtained a writ of certiorari from the Supreme Court, which will temporarily halt the proceedings.

This writ, which was served on Township Clerk Edward Hand and a certified copy of which was served on Justice Clark, both of Fanwood township, requires the township authorities to send up to the Supreme Court the ordinance and all the proceedings relative to the passage of the ordinance pertaining to the speed of autos. These will be reviewed by the Supreme Court, and a hearing called, when both sides will have an opportunity to argue their points. Meanwhile, the proceedings in Justice Clark's court are at a standstill and will remain so until a decision is given as to the constitutionality of the ordinance.

Former Judge W. A. Coddington, of the law firm of Reed & Coddington, who represent Mr. Unger in this case, was asked the reasons for the action.

"We claim," said Mr. Coddington, "that the ordinance is defective and void in law because it discriminates between the speed of automobiles and other vehicles. We also claim that the ordinance is a restriction of private rights of persons travelling on the public highway, and that the ordinance is unauthorized by the township act."

This case promises to attract much attention, not only in Scotch Plains but throughout the State, as it is the first time that a legal fight has been made on the constitutionality of the local ordinances which affect automobiles and no other vehicles. There is no precedent in the case, except the ruling as to bicycles, and the decision of the Supreme Court in the case will naturally affect the local ordinances on the subject throughout the State.

An electric patrol wagon, ordered by the Atlantic City, N. J., police department, is almost ready for shipment by the Electric Vehicle Company.

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THE MOTOR WORLD
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NEW YORK, OCTOBER 9, 1902.

An Auspicious Beginning.

With an entry list as large as can be handled without inconvenience, the promise of good weather and the certainty of a preponderance of good roads, the second important function of the Automobile Club of America starts to-day under exceptionally good auspices.

The number of starters is expected to fall but little below that of entrants; and for good reason. The cars are, almost without exception, far removed from the experimental stage, and they will be brought to the starting point with the full expection to of taking them through the entire contest. Some of them may fall by the wayside; a few of them will undoubtedly do so. But the vast majority of them are practically certain to make the journey without mishap, or only with such troubles as may be put to rights along the road or at the control stations.

As we have had occasion to say on previous occasions, the rules have been wisely framed. They have been so drafted that they escape the Scylla of too great severity on the one hand, and the Charybdis of undue leniency on the other.

The performances of the cars will be made plain as they have rarely been before. Where good work is done it will be plainly shown; just as the accidents and incidents that are certain to befall some of the vehicles will be recorded with equal fidelity. Concealment of weak points will not be possible. From the start to the finish each vehicle will be closely watched, and every lapse from the straight and narrow path of rectitude will be noted down.

The small showing of foreign cars in the contest is somewhat disappointing.

In the last year's run one vehicle of this kind was easily first in point of speed, and scarcely less meritorious for all-around excellence; while others of its class also made good showings. This was when the number of foreign cars here was much smaller than it is to-day, and when we were not so keen for comparisons as we are at the present time.

However, the work of the vehicles of home manufacture will possess sufficient interest, while the few imported cars participating will at least make some comparison possible.

The Automobile Club of America has planned almost perfectly. The experience it has obtained in managing affairs of this kind should cause the performance to be on a plane with the planning.

The only place where there seems to be any possibility of a botch being made is with the observers.

Their duties are delicate, arduous and exacting. They have been carefully selected, however, and their personality, combined with the fact that for a full week they are the guests of the club, should be a guarantee that their work will be, as it should be, well done.

Outside of their work the most interesting part of the contest will be the effect that the restrictions on replacements will have on the progress of the cars. By the rules, certain parts can be replaced, while others cannot. The justifiability of these inclusions and exclusions is, therefore, on trial. The outcome will give us a line on the matter that will prove of use in future contests.

Way for the Reliability Contest!

THE WEEK'S CASUALTIES.

TOTAL: KILLED, 33; INJURED, 57.

RAILROADS:	Killed, 23 / Injured, 23.
TROLLEYS:	Killed, 7. / Injured, 18
HORSES:	Killed, 3. / Injured, 12.
BICYCLES:	Killed, 0. / Injured, 1.
AUTOMOBILES:	Killed, 0. / Injured, 3.

TOTAL, TWO WEEKS: KILLED, 80; INJURED, 193.

Where the Trouble Lies.

No one who has given the subject of automobile track racing any thought can escape the conviction that the year past has wrought but little improvement in the sport as a sport.

Taken as a whole the race meets of the present season have shown some improvement over those of last year. But the strides made have not been great—certainly not as great as the progress of the industry in that time would cause one to expect with entire reason. There are many more and infinitely better automobiles produced in this country now than there were a year ago, and because of this fact there should be much more and considerably better racing.

Automobile racing appeals, or can be made to appeal, to the public in a twofold aspect.

First, there is the spectacular side of the matter. The famous racing cars and their equally celebrated drivers are much in the public mind, and it is an easy matter to work up a desire to see them under circumstances which will permit the development of this speed and skill in a manner impossible on the public highways. The very appearance of the space devouring monsters, the varied noises that accompany their flight around the track, and the truly heroic battles that are necessary to get them safely around the turns—these rarely fail to cause them to equal the anticipations formed of them.

Second, there is the element of racing, of real speed contests between vehicles so closely matched that the result is not apparent until the wire is reached.

The latter is really the quality on which the permanence of automobile track racing, if it is to be permanent, must be built.

Contests against time, or mere speed ex-

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hibitions, possess only an ephemeral interest. They serve as curtain raisers and are excellent talking features. But even the most hardened race goer would soon tire of them as a steady diet, and demand pabulum of a more satisfying if less meretricious character.

During the present season the spectacular side of the game cannot be said to have suffered. If the dashing personality and the well founded fame of a Fournier was wanting, and with it the glamour that always attends anything that partakes of an international character, the domestic cars and drivers quite made up for it.

The names of Winton and Cannon stand at the head, of course. Each has more than fulfilled the expectations formed of him, and given race meet attendants manifest pleasure. With them have been Harkness, Howard, White and others, whose performances have been creditable in the extreme.

But if all that could be asked for in this direction has been given, it is vastly different when we turn to competitions.

Races between evenly matched cars have been few and far between. Runaways have been the rule and not the exception. The lack, as well as the need, of them has been demonstrated by the eager attention and tumultuous applause given the few contests of the kind that have taken place. They were grateful oases in vast and unbroken deserts.

The reason for this distressing lack of close races is not far to seek.

It is not the want of handicapping or division into classes, or the failure to go into such matters as horsepower, cylinder bore and stroke, that is to blame. The absence or presence of such expedients for equalizing matters would really count for little.

The trouble is the lack of entries. Race meet promotors are keenly aware of the great difficulty of obtaining even a respectable showing of contestants. In spite of all their efforts the sum total of cars usually hovers around the dozen or dozen and a half point, this including all the vehicles the owners of which could by hook or crook be induced to enter into the competition.

When the time came for the races there was found to be a disheartening number of withdrawals.

For one reason or another cars failed to show up at the track, or were scratched from some or all of the races in which they were entered. The fields dwindled so much that frequently the number of prizes given could be cut under the conditions of the race, or the latter even declared off.

The remedy is bigger fields and a more minute division into classes.

There are hundreds of evenly matched vehicles; cars that without possessing very great speed can yet furnish interesting contests—and, after all, that is what is wanted. Encourage the owners of such cars to enter, guarding them from the ridicule consequent upon being badly beaten by so framing the rules that only similar vehicles will compete against them.

Such a method, if tried next year, will almost certainly work a decided improvement in the sport of racing.

A Much Needed Improvement.

Next to the smell of partially consumed gasolene, which is common to many cars—and in the public mind associated with nearly all automobiles—the feature of the average gasolene car mostly strongly complained of is the noise.

With the average user of the motor vehicle this is a matter of little moment. Whatever dislike he may have had for it in the beginning soon disappears. In the case of the French user, for example, a positive liking for the noise of the exhaust arises, and a sort of competition sets in to see whose car shall give the best results in this respect. The efficiency of mufflers becomes a matter of no importance whatever, and if left to themselves no small number of such automobilists would discard them altogether.

But the attitude of these and other users is a matter that need not give us any concern just now. It is the public that objects most strongly to the noise, and to its wishes we must give some slight consideration.

At a recent race meet a car signalized itself on its debut quite as much by its remarkably silent running as by its success as a speed vehicle. The "noiseless car," it was dubbed by many, and this in spite of the fact that it was noiseless only by comparison with the other cars pitted against it. More questions were asked about this single feature than all others combined.

There is another well known make of car that has long excited favorable comment by the unusual success which attends the efforts of its muffler to really muffle.

As this car goes by people stop in the streets and look at it, impressed with the fact that there is something unusual about it. Approving remarks are made, and even among tradesmen and automobilists using other makes this feature is dwelt upon with approval, and wishes are expressed that other cars were as well fixed in regard to mufflers as it is.

"What, buy one of those dirty, bad smelling, noisy machines? Not if I never got a chance to enjoy the pleasures of automobiling," was the way one man put it to us, and he wound up by saying that of the three disadvantages referred to he thought the noise, the constant thump, thump, of the exhaust was the worst feature.

It is an open secret that comparatively little attention has been given to the subject of muffling, not because there were any great difficulties in the way, but rather because it was felt that it made but little difference how much noise, within certain limits, there was. Of course, the fear of impairing the power by efficient muffling has something to do with this indifference. But the major part is due to the inferred lack of a demand among buyers for noiseless machines, and there can be no question that if such a demand were believed to exist speedy steps would be taken to remedy the trouble.

But even outside of such a demand, the fact remains that in the public mind, already irritated sufficiently, goodness knows, against automobiles and automobilists, the noise of the cars constitutes no small part of their offending.

A reform in this respect would do a world of good.

How They Work It.

Down on Long Island the new game, chasing the automobilists, is adding fresh zest to the erstwhile tranquil lives of the bucolic inhabitants. The sleuths whose business it is to signal the approach of victims to time them and then to arrest them, and who are out all day long, rain or shine, never get tired of the game. They have small boys who warn them of the coming of the proscribed vehicles, thus permitting them to get ready in ample time. It is so still in those sequestered regions that the sound of the exhaust of a gasolene car can be heard a long distance off. If the sleuths referred to happen to be dosing when this takes place the small boys come running to them with the glad news that another automobile is approaching, and the tin can signalling apparatus is tested to see if it is in working order, the "stop watches" are wound up and started and then everybody gets out of sight. And it is seldom that the watches fail to declare a driver guilty.

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Design of Early American Gasolene Vehicles

While Europe is the home of good roads and has been largely recognized as the originator of the motor vehicle, the fact remains that American mechanics have always been awake to the possibilities of the self-propelled vehicle, and have not been behind in the production of devices of this kind.

For many years experimental vehicles have been produced on both sides of the water and while lines of experiment and production may extend back farther in Europe than in America because of the encouragement constantly held forth by the ever present good roads there are a number of manufacturers who have done more or less work on this problem in the past fifteen years, and a record of this work cannot fail to be of interest.

Perhaps the most persistent if not the original gasoline motor vehicle builder is Charles E. Duryea, who, assisted by his brother, J. Frank, brought out the vehicles shown herewith. He selected the internal



combustion motor, electrically fired in 1886 as the proper motor for vehicle work, but no suitable motors were in existence at that time or for years after, so experiments were made as time and money permitted, to produce a vehicle motor. In 1888 he assisted in an advisory capacity on a steam-driven buggy, which, however, was not finished because of the death of the maker.

By 1891, however, the market was regarded as sufficiently ripe for a cheap carriage, costing $350 to $500 and intended for people not able to afford the expense of keeping a horse and buggy. To meet this low price market a carriage of the design shown was begun following as closely as possible horse carriage lines and using standard parts wherever practicable. This vehicle was finished in 1892 with a motor giving 1½-horse power water cooled, electrically fired and with spray carburettor, which devices have since become standard. J. Frank Duryea, a young and most able mechanic, was in charge of the work, and to his skill and indefatigable perseverence much of the perfection of details with consequent successful results are due. The lack of power necessitated a larger motor with somewhat heavier construction, which was embodied in the phaeton shown, finished in 1893, fully a year ahead of any other American product, unless the single experimental vehicle of Nadig Bros., Allentown, Pa., is an exception. The fact, however, that the



vehicle shown here was the second of its kind indicates that the first was the earliest American gasoline vehicle.

The tiller steering, now so common, was used, with fixed rear axle and double chain drive to the rear wheels. A variable friction driving device was likewise used, but as more power was found to be necessary this device, good enough for small powers, was abandoned and a positive gear with friction clutches substituted. The motor was controlled by governor and the speed variation by an up and down motion of the tiller lever, which permitted either rider to handle the vehicle as readily as a horse could be handled, giving a simple controlling arrangement which most modern manufacturers have not yet succeeded in approaching. Being built at Springfield, Mass., where winters are long and snowy, spiked iron

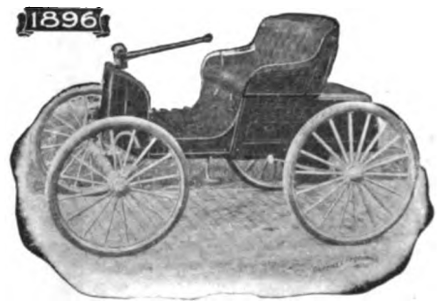


tires were necessary to secure traction, and the vehicle was undoubtedly fully as capable as the foreign product at that time, although not well suited to the bad roads of America.

The experience gained, however, opened a new line of thought, for it showed the superiority of the motor over the horse, and instead of attempting to build a low-priced carriage it was decided to build the best motor carriage possible and sell it to people who desired and could afford something better than a horse, at prices ranging from $1,000 to $2,000.

Accordingly the 1894 model was designed and built in that year, most of the detail work being left to J. Frank Duryea, while Charles maintained his connection with the bicycle business and assisted to provide the sinews of war. This vehicle was finished in the winter of '94 and '95, and used almost daily the following summer. It was regarded as sufficiently perfect to be exhibited without excuses and made trips, such as to Hartford and back, at the rate of 12 to 15 miles per hour, over roads not so good as they are to-day, when traversed by the New York to Boston contest at no greater rate of speed.

About this time the Paris-Bordeaux race attracted such attention throughout the world that the Times-Herald of Chicago offered $5,000 in prizes for a contest to be held at Chicago in the fall of that year, believing that sixty to ninety days was ample



time to complete a perfected motor vehicle which consisted only of a motor attached to a vehicle and could readily be made by any one. More than eighty entries were received, but only a few carriages were ready, so the contest was postponed until Thanksgiving Day, at which time eleven vehicles received starting numbers and seven actually started.

A deep snow had fallen two days before and lay everywhere 12 to 15 inches deep, covered with a crust strong enough in many places to support sleighs and pedestrians. This unexpected obstacle proved insurmountable to most vehicles, and all the starters excepting Duryea required pushing (contrary to the rules) within 100 yards of the start and frequently thereafter. The carriage shown won the first prize, $2,000, being the only carriage to return to its stable the same day, while but one other, a Benz (of which two started, being at that time one of the best foreign machines), succeeded in covering the course.

This contest was the first automobile event in America, and marked the beginning of the new business. The enthusiasm and ex-

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perience of the various inventors was not without result, and the conditions by their very secerity did much to place the American motor vehicle ahead of the world in capability. The Haynes-Apperson Co. of Kokomo, Ind., entered their second vehicle, which they had just finished, their first one having been finished in July, 1894, but buckled a wire wheel in a car track while proceeding to the starting point and were therefore unable to compete, an accident much to be regretted, for it shut out of the contest a most deserving machine, being, like the Duryea, double cylinder and representing a better design than the foreign machines entered.

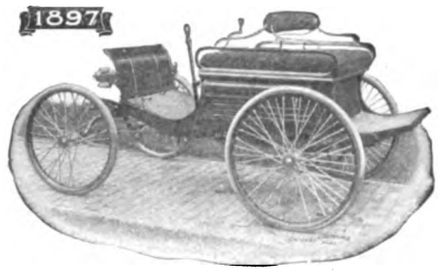
The winning vehicle had hollow parcels' dash, water tank under the forward floor exposed to the air, pump circulation, gear and friction clutch transmission, giving three speeds forward and reverse, together with motor shaft lengthwise the vehicle, with bevel gear transmission of the power to the counter shaft, all of which features have since been largely adopted by others, particularly by the foreigners, who at this time were largely using belts. Although equipped with governor, it had a push button for varying the governor action, as is still largely used. These many modern features, coupled with the evident superiority of the vehicle as compared with foreign machines brought to this country, show clearly the superiority of the American product.

The need for greater power and the possibilities of high speed were made evident by the Chicago winner, on which account the next design had lower center of gravity, long wheel base, smaller wheels, larger tires, more powerful motor, greater fuel capacity, and became in fact a modern vehicle. Four of these were entered in the Cosmopolitan race from City Hall, New York, to Irvington and return Decoration Day, 1896, while three of them were the only vehicles to return to the city the same day.

In this contest the only foreign vehicle entered was a Roger, a prominent French vehicle of Benz design. In the carriage shown belt transmission instead of gears had been adopted because of its greater simplicity and lessened cost, a distinctly backward step as experience showed, but made because of the prevailing use of belts abroad, which seemed to appeal to the public as the proper thing.

In 1896 a light, more powerful vehicle of much the same design was brought out, and took part in the Liberty Day run, the first automobile event in England, from London to Brighton, Nov. 14, 1896. In this event the first, second and third winners of the Paris-Marseilles-Paris race, with the men who drove them to victory, were present for the purpose of leading the way and showing the assembled multitudes the first motor vehicles in the world. The Duryea vehicles, of which two were entered, occupied an obscure position well to the rear, behind slow-going traps such as electric bath chairs, and were not able to get ahead until well out of the city, after which they rapidly passed to the front, the one shown beating the nearest foreign vehicle into Brighton by nearly an hour; distance 52 miles; a conclusive showing of the superiority of the American product. This unique record still stands as the only instance of an American gasoline vehicle beating the foreigners on their own roads.

In this vehicle was used for the first time a dynamo for ignition purposes, the advantages of which are now quite thoroughly



recognized by most prominent builders. This vehicle weighed less than 1,200 pounds, and was equipped with five to six horse power, being therefore much higher powered than many vehicles on the market to-day.

The light, wire-wheeled runabout was next given attention, and was almost wholly the work of J. Frank Duryea, both in general design and detail construction. It made use of opposite double cylinders, as advocated by the Haynes-Apperson Co., instead of the twin cylinders formerly used, adopted the steering post, with crank or wheel as desired, instead of the tiller, and incorporated the change speed lever with the throttle instead of with the steering as before. Corrugated tubular water tanks along the sides of the vehicle and detachable dos-a-dos seat



were modern features. Both this machine and its predecessor used angle iron framing and semi-elliptic springs, no reaches and similar modern features, while the inclined floor shown has but recently been adopted by others.

Profiting by these various experiences Chas. E. Duryea designed in 1897 a triple cylinder motor of light weight and great power, and a transmission gear of the sun and planet type, applied on the motor shaft by the side of the flywheel, making the motor and gearing a unit, which construction is now beginning to be recognized as the cheapest and most satisfactory yet designed. No counter-shaft, no complicated framing and no extra bearings were required by this construction, but the power was transmitted directly from the motor shaft to the rear axle by chain, also of special design. This vehicle was further built with either three or four wheels, and the three necessary functions of steering, throttling and speed changing were incorporated in a single lever placed between the riders, so the vehicle could be driven from either side or with either hand, thus finally carrying out the long cherished idea of the inventor that a motor vehicle must be handled as easy or easier than a horse by any member of the family.

The value of multiple cylinders is being recognized by the public more than ever before, and a number of makers such as Wolseley and Brooke of England and the International Co. of America have recently adopted triple cylinder as possessing advantages over double without the complication of quadruple.

The fact that so many important features first shown in America have since been adopted by foreign manufacturers certainly bears out the assertion that America has led in design and quality if not in the number of vehicles produced.

Clearly Illegal Position.

Chief of Police Maloney, of Niagara Falls, N. Y., is reported to have stated that it is his intention to "take steps at once to enforce the speed regulations placed upon automobiles of the city by the city ordinances, which state that horseless carriages shall not be driven at a rate of speed in excess of 12 miles an hour from sunrise to sunset, and at a rate of six miles an hour from sunset to sunrise."

The doughty chief is reminded that there is a law in this State which distinctly forbids the passage of any ordinance fixing the speed of motor vehicles at less than eight miles per hour. Consequently, if Niagara Falls has a law making the maximum speed at certain hours six miles it is clearly illegal.

Syracuse to Enforce.

Syracuse, N. Y., automobilists have been notified that hereafter the law limiting speed to eight miles an hour will be strictly enforced. This is the result of the action of the commissioner of public safety. He has reminded the head of the police department that eight miles an hour is the limit of speed permitted by a vehicle or machine of any kind in the city limits according to the law. He also says that a speed of five miles an hour only is permitted in turning corners. The order also instructs policemen to compel owners of vehicles, automobiles and bicycles to keep to the left side of the road.

Curious Demand From Cuba.

"About the most inexplicable demand that is reaching me," said Charles E. Miller, the well known New York jobber, "is the call from Cuba for automobile bells. Although there are not more than six or eight motor vehicles on the island, for the past several weeks I have been shipping an average of two dozen bells per week. What they are doing with them all beats me."

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THE CASUALTIES OF THE WEEK

RAILROADS {Killed, 23. Injured, 23. **TROLLEYS** {Killed, 7. Injured, 18. **HORSES** {Killed, 3. Injured, 12. **BICYCLES** {Killed, 0. Injured, 1. **AUTOMOBILES** {Killed, 0. Injured, 3.

TOTAL, THIS WEEK: KILLED, 33; INJURED, 57. TOTAL, TWO WEEKS: KILLED, 80; INJURED, 193.

Possibly it was a bad week for automobile accidents—bad, that is, from the standpoint of the autophobe—for the records show an insignificant number of them. Only one of these was of a nature at all serious.

Other classes of accidents, however, do not make equally pleasant reading. In fact, they are mainly of a fatal nature, and make sickening reading. In conjunction with those of the previous week not previously noticed, the showing is an appalling one. The railroad train is, of course, by far the most deadly. Next to it is the trolley car, while the horse managed to inflict a great deal of damage.

The list below covers two weeks, that from October 1 to 7, inclusive and from September 25 to 30, inclusive, the latter containing only accidents not reported last week.

PRIOR TO OCTOBER 1.

Fonda, N. Y., William Maxwell struck by train; badly injured.

Cleveland, O., E. H. Hopkins and infant daughter and Miss Trowbridge had their teams struck by trolley car; all were severely bruised.

Union Hill, N. J., ten persons were hurt by a runaway trolley car.

Waltham, Mass., Mrs. Gale struck by bicycle rider and injured internally.

Rochester, N. Y., W. E. Wittman, baker, team struck by trolley car; badly bruised.

Ithaca, N. Y., F. S. Hopkins, motorman, struck by trolley car in collision; died.

Indianapolis, Ind., four persons injured by collision between train and trolley car.

Chicago, Ill., Anton Osowski killed by Panhandle train.

Chicago, Ill., C. M'Kune struck by trolley car; killed.

Geneva, N. Y., W. W. House kicked by a horse; will recover.

Watertown, N. Y., J. Woodruff struck by train; killed.

Utica, N. Y., Frank Goodrich struck by train and killed.

Utica, N. Y., George Girvin fell from trolley car; died from injuries.

Ogdensburg, N. Y., three-year-old child of G. W. Huntley struck by locomotive and killed.

Springfield, O., Miss Rose Lessler killed and D. Sullivan seriously injured by trolley car.

Frugality, Pa., Edward Dumphy, driver, thrown from team; several ribs broken.

Ashland, Ky., William Jackson, brakeman, killed by engine.

Highmore, S. D., Findlay Guiher thrown from horse; killed.

San Francisco, Cal., Mrs. Jas. McLean severely injured in runaway trolley car.

Oakland, Cal., Samuel Spring, E. A. Higgins and Willie Spring, struck by train; the last named may die.

Omaha, Neb., Mrs. Mearaschi struck by train; badly cut about face and hand.

Huntingdon, Ind., Fred. Fahrnow, while loading a freight car, fell and cut his foot with a cant hook, causing a fracture of the heel.

Huntingdon, Ind., Mrs. Alberts struck by train and severely bruised.

Colombus, O., Jennie and Robert Batterson, children, struck by trolley car. The boy's leg was broken and the girl was badly cut on the head and body.

Russet, Indian Territory, L. Cashion fell from a train and was killed.

Rennselaer, N. Y., Carl A. Mittwede struck by train and killed.

Wilmington, Del., Emmett Maloney, car inspector, struck by freight cars; afterward died.

Newburgh, N. Y., seven men injured in collision between trolley car and train; one may die.

Barrytown, N. Y., C. Wheeler and B. Grube struck by railroad train. Wheeler's arm and leg were broken.

Birmingham, Ala., W. H. Embrey struck by freight car; died.

New Orleans, La., Howard Stowe run over by train; killed.

Dallas, Tex., Michael Davis, brakeman, caught between two cars; killed.

Conneaut, O., Alfred Hall, brakeman, fell under freight train; killed.

Youngstown, O., Geo. Bagnull, brakeman, struck by car; killed.

Great Falls, Mon., Mary Konisky struck by train; killed.

Bluefield, W. Va., William Jackson, brakeman, struck by train; killed.

Detroit, Mich., Gus. Felska struck by bicycle; died.

Montgomery, Ala., D. G. Bloom struck by train and several toes and other bones in foot broken.

Detroit, Mich., Leon Plaschke struck by train; killed.

Indianapolis, Ind., five persons injured by collision between trolley car and train.

Hartington, Neb., Jacob Soehner struck by train; killed.

Milwaukee, Wis., Mr. and Mrs. A. Mehl struck by trolley car and badly cut and bruised.

Bloomington, Ill., G. Williams struck by train; may die.

Decauter, Ill., Elmer Clayton struck by train; severely injured.

Kalamazoo, Mich., Fred Fick struck by train and severely injured.

Buffalo, N. Y., Mrs. Minnie Spears fell from trolley car and was cut and bruised.

New York, Simon Prockiezto struck by trolley car; may die.

Ithaca, N. Y., two men injured by trolley car accident; one died.

Buffalo, N. Y., Mary Bank struck by a wagon; arm broken.

Rockford, Ill., Micheal Rochford struck by trolley car and bruised.

Little Rock, Ark., W. S. Johnson, conductor, run over by his train; killed.

Temple, Tex., J. Stephens, brakeman, run over by train; killed.

Dallas, Tex., W. S. Wilson struck by trolley car and severely bruised.

Logansport, Ind., J. Johnson, brakeman, struck by car and spine injured; may die.

St. Paul, Minn., Samuel Carman thrown from his bicycle and seriously cut about head.

Jamestown, N. Y., Glenn Carnahan struck by train; killed.

OCTOBER 1.

Buffalo, N. Y., Eugene Carnel thrown out fo wagon by runaway horse; bruised and hurt internally.

Bloomington, Ill., Lloyd Nelson struck by bicyclist and bruised.

Wilkesbarre, Pa., John Mullen struck by trolley car; killed.

Albany, N. Y., Philip McGuire struck by freight train; killed.

Willimantic, Conn., unknown man struck by train; killed.

Lawrence, Mass., Geo. Laviolette, conductor, fell under trolley car; killed.

Claremont, N. H., two men struck by train and killed.

Enfield, N. H., F. Easton thrown from carriage by runaway horse; badly cut and bruised.

Canterbury, N. H., J. K. Hancock and son thrown from carriage by frightened horse; badly bruised.

Milwaukee, Wis., Elmer Sepner and Mrs. Waldo struck by trolley car; latter killed and former may die.

Milwaukee, Wis., Charles Muss struck by train; right leg fractured and otherwise cut and bruised.

Terre Haute, Ind., A. B. Stoner fell from bicycle and run over by lumber wagon; knee fractured.

Cincinnati, O., Jos. Marx injured in trolley car collision; concussion of the brain.

Paterson, N. J., C. Porta struck by train and killed.

Jamaica, N. Y., Maggie Malloy, four years old, struck by runaway horse; slightly injured.

Paoli, Ind., W. W. Key struck by train; killed.

Philadelphia, Pa., Joseph Lynch fell from his wagon and was run over; died.

Marion, N. J., Miss Florence Leighton struck by trolley car; leg broken.

Buffalo, N. Y., R. G. Wooden struck by Lake Shore train; killed.

Winsted, Conn., Hiram Traver struck by train and killed.

Elwood, Ind., Mrs. Archibald Wood struck by trolley car and injured internally; may not recover.

Newburyport, Mass., Mrs. Murphy struck by trolley car; will probably die.

Long Island City, N. Y., Charles Gray and John Denn struck by trains; killed.

New York, cab struck by trolley car and three passengers slightly injured; driver's arm broken.

Akron, O., R. Bence struck by locomotive; died.

(Continued on page 50)

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Because of Location.

Owing to its proximity to two great cities—New York and Philadelphia—Doylestown, Pa., has become impressed with the magnitude of the automobile speeding evil, so it is declared. Last week the Grand Jury was informed by the court that it must take into consideration that "we are located between two great cities, and must of necessity gather some of the flotsam that swarms between these scenes of activities. The great number of our cases are not due to our own people, but to those who come from without our community.

"The court called the Grand Jury's attention to a new form of nuisance that was menacing the public, referring to the engines of steam or other motive power called automobiles. It is a common thing to read of deaths caused by the engines being run by reckless men, who by reason of their great wealth think they owe nothing to the safety of the community. What farmer or farmer's wife feels safe to hitch up and drive upon the public highway by reason of these engines? The safety of the public on the highway is a subject for the consideration of the Grand Jury, and they were instructed that the drivers who run engines at reckless speed can be arrested and indicted, notwithstanding how much money they may be the possessors of.

"It is therefore very essential that the palpable violation of the law should have the attention of the constables and supervisors, and it was hoped that any violation would be brought before the court where prompt justice would be meted out"

Talking Without Its Book.

"Grotesquely incorrect statements have found their way into print asserting that in the early days of bicycles the records of serious accidents in the roadways were as disquieting as the pitiful array of fatalities due to automobiles. There is no truth in such misrepresentations. In proportion to the number in use, automobiles have done more injury in the thoroughfares in every country where they are known than the bicycles ever did," says the Tribune, which has long omitted no opportunity to strike at the motor vehicle.

"Ponderous machines weighing many hundreds of pounds are, of course, more dangerous to riders and those who are run down than light "safeties" can possibly be. It is no exaggeration to say that so many men, women and children have been killed or crippled by carelessly handled automobiles that people of feeling are distressed and indignant."

Value of Good Appearance.

"We cannot help thinking that some makers are not careful enough of appearances. Very frequently we pass an agency for a fairly well known car which has a good reputation, and should sell well. Two of these cars stand in the firm's window, and something is always being done to them. Either the tires are off or the bonnet is removed, or some alterations are being effected to the gear," says a contemporary.

"This must have a bad influence upon the public, who will naturally conclude that if the agents themselves have to be continually tinkering with the cars, there would be plenty of trouble in store for the purchaser. The best of cars need adjustments occasionally, but the wise agent will not effect these in full view of the public, but will only have in his window cars that stand completely equipped and ready to run.

"We have seen instances of carelessness even in the best firms. The makers of one of the finest cars in existence were about to give an intending customer a trial run when the engine refused to start. It was only a faulty valve, which, when detected, was put right in a minute. But meanwhile another car had been requisitioned for the trial spin, and the customer would doubtless have had his good opinion a little disturbed. The motor car trade is a little in want of good window dressing—or should it be called stage managing?"

Purposes of the Pedestrians' League.

The Pedestrians' Protection League, the English organization whose formation was referred to a few weeks ago, has got along sufficiently to declare its purpose. These are as follows:

(1) The establishment of a parent society in London and some fifteen branch societies in provincial centres; (2) to oppose any alteration in the existing law relating to motor cars which might be prejudicial to the interests of the general public; (3) the registration and numbering of cars and licensing of drivers, and the indorsement or forfeiture of license on conviction of breach of regulations; (4) to employ inspectors on the main roads to watch delinquents and report facts to the society.

The league will also give free advice to its members in cases of accident or negligence, and assist non-members of the poorer class in obtaining compensation if justified.

INTERESTING FOREIGN MOTOR DETAILS

In a table prepared by that eminent French authority, the Compte Chasseloup-Laubat, the constructional details of the principal types of French motors are given in detail. The motors described are six in number, viz., the Panhard-Levassor, the Mors, the Buchet, the De Dion-Bouton, the Delahaye and the De Dietrich, the latter two having horizontal motors. The more important data is contained in the table follows:

Constructors.	Types (in horse power).	Normal Speeds per Minute.	Details of Construction.	Number of Cylinders.	Diameter of the Cylinders in mm.	Strokes of the Pistons in mm.	Volume of the Cylinders in Litres.
Panhard and Levassor.	5	750	Vertical motors. Cooling by water, pump, radiator, and all the cylinders, and cylinder heads. Ignition by tube or electric with coils.	2	80	120	0.603
	7	750		2	90	130	0.827
	10	750		4	80	120	0.603
	12-15	750		4	90	130	0.827
	16	750		4	100	130	1.021
	20	750		4	110	140	1.330
	30	750		4	130	140	1.858
Mors.	8	1,150	Vertical motors. Cooling of the cylinders and cylinder heads by water, pump, radiator. Magneto ignition.	4	70	95	0.366
	12	1,000		4	78	112	0.535
	15	900		4	87	128	0.761
Buchet.	4½	1,500	Vertical motors. Cooling of the cylinders and cylinder heads by water, pump, radiator. Electric ignition by coils without trembler and cam with sudden breaking. Wings (or flanges) on cylinder heads, smooth cylinder.	1	85	90	0.511
	6½	1,500		1	100	100	0.785
	9	1,450		1	110	120	1.140
	8½	1,500		2	85	90	0.551
	12	1,500		2	100	100	0.785
	16	1,400		4	85	100	0.567
	24	1,400		4	100	110	0.864
	40	1,350		4	110	120	1.140
De Dion-Bouton.	1¼	1,550	Flange cooled cylinder and head. .	1	66	70	0.239
	2¾	1,550	Water cylinder heads, flanges on cylinders.	1	74	76	0.327
	4½	1,550	Water cooled cylinders and heads.	1	84	84	0.466
	6	1,550	All these motors are vertical, electric ignition by coils without trembler, and mechanical trembler.	1	90	110	0.670
	8	1,300		1	100	120	0.972
	10	1,300		1	110	130	1.235
	12	1,200		2	100	120	0.942
Delahaye.	8	900	Horizontal motors. Cooling by water, pump, and radiator. Electric ignition with coils without trembler, and cam with sudden breaking.	1	110	140	1.330
	12	1,000		2	100	140	1.099
De Dietrich.	8	750	Horizontal motors. Electric ignition or by tubes. Water vaporizing, then condensing in the radiator. .	2	98	160	1.207
	12	750		2	110	160	1.520

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Commentary

We had our share of adversities in our advocacy of the automobile, but they are all as nothing compared with the awful calamity which has just fallen upon Parisian automobiling. Diebler, who as "Monsieur de Paris" has an extremely lucrative business in shortening men's lives and their statues at one and the same time by the aid of the guillotine has wound in automobiling relief from the extremely strenuous demands of his profession. No sooner, however, did tout Paris become aware of this than a shiver went the entire length and bredth of the boulevards. How to escape from recognizing the public executioner as a fellow automobilist is what is now keeping the Marquis de Dion and other aristocratic sponsors of the motor vehicle from enjoying their usual complacency. Lacking any definite information from Leibler I conclude that he is not nearly as much wrought up over the matter as the De Dionites.

* * *

Nine men out of ten if asked why a man will deliberately drive a vehicle at a speed which not only endangers his own life but that of every other user of the highway as well would say that it was because the guilty driver was bereft of brains. As usual the nine men would be mistaken, and the tenth one—in the present instance he is a French physician of repute—would probably be found to be correct when he said that the cause of all the trouble was "locomotor hysteria." According to the French doctor this disease manifects itself in an insane desire of the stricken one to get over the ground quickly. A locomotor hysterialte cannot abide anything slow. Should he be a horseman, for example, he lashes his horse into a continuel gallop. The locomotor hysteric runs to catch a car, a ferryboat, an elevator or anything else when there is not the slightest need for his doing so. Naturally such a sufferer is at his worst when he grasps the steering wheel of an automobile and proceeds to slay distance records and such miscellaneous live stock as debates upon the order of its going. When this stage of the disease is reached the hysteric becomes that modern terror, the scorcher. The French discoverer of the microbe of speed madness does not suggest any remedy, but sooner or later I'll expect to see some smart Aleck come forward with a serum, one little inoculation of which he will guarantee will make the most violent scorches as gentle and as quiet as a suckling dove. In the meantime—well, we'll get along as best we can.

* * *

Writing about this French physician recalls what I told you last week about the British one, and the awful diseases he predicted would come from automobiling. Well, no French or British doctor need think he's going to have so good an advertising medium as the automobile all to himself. Our American doctors are not so slow as all that, and so our own Dr. Shrady, who is always ready to rush into print for any or no reason, comes promptly to the front and says: "Catarrhal affections and earache are very frequent among enthusiastic devotees of automobiling, while the constant strain on the nerves and muscles of the eyes is likely to produce conjunctiritis." Furthermore, Dr. Shrady declares that the suction of the air makes respiration difficult and irritates the air passages. But, last and worst of all, the rider in an automobile is in grave danger from a hitherto unsuspected cause since, according to Dr. Shrady, "escaped electricity is likely to prove harmful by producing irritability of the nervous system and severe headaches." When you read such things as this is it any wonder that, even as far back as Shakespeare's time, men were advised "to throw physic to the dags"?

* * *

Nay, do not pity him who sees
In any auto so much that doth displease,
His greatest joy, beyond a doubt,
Is finding things to kick about.

* * *

In England it is customary for careful people to take out policies of insurance protecting themselves from the wild decisions of appellate courts. If the British company which sells these policies will only open a branch office in this country I can assure them of a large, if not a profitable, trade among American automobilists, who have at present no form of protection from either the lawmaker, the law enforcer or the law construer, one and all of whom are against the automobile first, last and all the time.

* * *

One of those young matrons whose good fortune it is to have inherited money and to have wedded more, purposes introducing the fashion of having her motor coachman appear in a powdered wig. Here's where the Society for the Prevention of Cruelty to Humans ought to step right in and call a halt. To the eyes of all, except a society grand dame, perhaps, the coachman who finds himself metamorphosed into a chauffeur is already quite enough of a horse marine without any attempt to make him both uncomfortable and ridiculous by insisting that he don a white horse hair wig.

* * *

You can't easily convince yourself when you stand admiring one of those great, big, shining, rapid moving touring cars that the automobile is still in its infancy. However well you may know that the finest vehicle of to-day will be looked upon by the next generation much as we look upon the locomotives which were thought to be so wonderful in the early part of the last century, you cannot readily make yourself believe it will be so. But the pace is far more rapid nowadays than it was half a century ago. A new idea is quickly taken hold of and speedily developed, and the time will be exceedingly short before the automobile has been rendered in every way more efficient than it is now. The lesson taught by the locomobile has not been forgotten. What it took fifty years or more to do for the locomotive will be done, and better done, for the automobile in a decade at most.

* * *

Of course, I may from my occupation be inclined to view the matter too critically, but after a rather extensive study of the catalogues issued by automobile manufacturers I am of the opinion that most of them are failures—meaning the catalogues, of course. To be really effective a catalogue should be amply illustrated, fully descriptive and logically arranged. A catalogue, to my mind, requires more careful editing than does a magazine. The man who compiles a catalogue must have a knowledge of the business for which that particular catalogue is issued, and, combined with this knowledge, the ability to edit and to arrange it systematically, or the result will be a failure. This, to my mind, is why most catalogues relating to automobiles are not full value for the large amount of money they had cost those who paid for their issuance.

* * *

If you have an excellent map of this great and glorious country, and with it you possess patience and the eye of a hawk, you may, after a long search, find in the State of Illinois, a tiny speck upon it about the size of this . labeled "Mattoon." Of course you never heard of this progressive metropolis before, but that only shows your ignorance, not its insignificance. That fame may no longer class Mattoon among the "also rans" in the race for legislative automobile idiocy, a measure has been introduced in the City Council taxing all automobiles owned in Mattoon, Illinois, $200 per annum! Thus does the metropolis of Mattoon place itself abreast of all the great cities, and the membership roll of the Independent Order of Legislative Asses receives a worthy addition in the brother from Mattoon.

* * *

Perhaps it is but natural that I should be somewhat of a doubting Thomas, but in view of all the dam foolishness about the automobile which appears in print, can you blame me if I am inclined to sniff at a wireful message from Rome which announces that Marconi has said "he has perfected an electric motor car which, with a battery weighing 250 pounds, has a speed of 38 miles per hour and a touring radius of 560 miles from one battery charge"? Perhaps Marc. has done all he claims and more, but in view of certain promises made nearer home and as yet unfulfilled, if I had money enough to buy an electric vehicle I'd never send the order therefor any further away from where I am now than Cleveland, Ohio, or Hartford, Conn., U. S. A., Mr. Marconi of Rome and his promises notwithstanding.

THE COMMENTATOR.

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NEW PANHARD CLUTCH

Famous French Firm Make Some Changes in Their Standard Pattern.

Anything of a novel nature bearing the stamp of Panhard is certain to possess unusual interest. Although not prone to make changes, whether of major or minor importance, the famous Paris firm is not content to stand still.

The new Panhard clutch is shown in the accompanying illustrations. The general arrangement is shown by figs. 1, 2, and 3. The first figure is a longitudinal section, the second being a transverse section on the line a b. Fig. 3 shows an alternative method of construction.

The arrangement consists in causing the two conical surfaces A B (figs. 1 and 3) to make contact, so that the female cone, which is seen to be bolted to the flange on the clutchshaft H, is driven by the male cone B, which is rotated by the studs C C (figs. 1 and 3) set in the rim of the engine fly-wheel V, and projecting therefrom to form sliding guide rods for the backward and forward movement of the sliding clutch B B, when same is actuated by the lever P P, operating through the sliding collar K K. The male and female coned clutches are retained in driving contact by the pressure of the spring D D, which has as a thrust block the collar N N fast on the hollow clutchshaft H. By this arrangement it will be seen that the thrust from the clutch spring, as generally understood, is altogether avoided, and the necessity for a thrust bearing done away with. The dished fly-wheel V is bolted to the flange on the endend of the engine-shaft M, the central hollow in the boss of the fly-wheel being fitted as an end bearing for the clutch-shaft H. The thrust of the spring at the moment of unclutching is taken by the thrust bearing X, but there is no permanent thrust of the spring when the friction cone clutches A B are in contact.

When the cone B is withdrawn from driving contact with the cone A it revolves freely on the clutchshaft H, and in the collar bearing K, but exerts no rotative force whatever on the shaft H although it continues to revolve with the fly-wheel V. When the cone B is withdrawn from contact with the cone A the shaft H is absolutely free from engine drive.

It will be noticed that both the male and female cones of the clutch are mounted upon the hollow clutchshaft H, and that the fly-wheel V forms no portion whatever of the clutch, its function being to drive the male cone B through the studs C C. The consequence is that under no circumstances can there be any end thrust upon the crankshaft, and, as before stated, it is only when the male cone B is out of engagement that there is any end thrust upon the clutchshaft.

A, female cone of clutch bolted to clutch shaft H.

B, male cone of clutch bolted to flange of sleeve G, free on shaft H.

C C, clutch driving studs, projecting from rim of flywheel V and driving male cone B.

D D, clutch spring.

E E, bushed cone sockets, sliding on studs C C.

F F, leather liner on male cone B.

G G, free sleeve on shaft H carrying male cone B.

H, clutch shaft.

K K, clutch collar, made in halves.

L, ring retaining K.

M, engine shaft.

N, clutch spring thrust collar fast on shaft H.

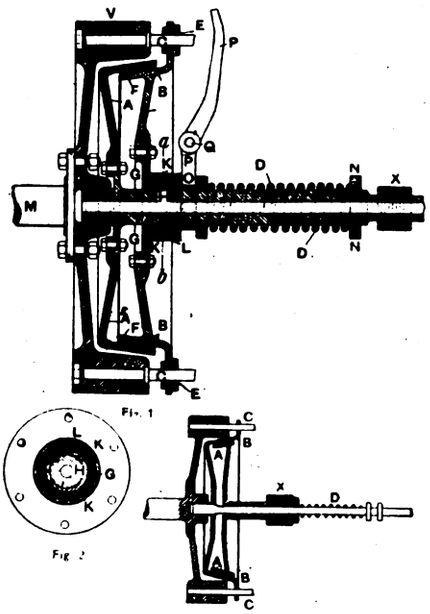


Fig. 1

Fig. 2

O, groove in K to take clutch fork.

P P, clutch fork.

Q, clutch fork spindle.

V, flywheel.

X, thrust bearing.

Metzger's Friends Surprise Him.

In testimony of the appreciation in which he is held William E. Metzger, promoter of the now twice postponed Detroit races, was made the recipient of a present that ought to compensate in no small measure for the disappointment and loss he has suffered on account of the bad weather.

The gift took the form of a magnificent punchbowl, the donors including almost every one of the prominent automobilists who had come on to attend the races.

The idea was not conceived until the same afternoon, but the punchbowl was selected, suitably engraved and presented at a little after-theatre supper, the presentation being made by Erza E. Kirk.

It was a very pretty and graceful tribute to a deservedly popular gentleman, and does equal honor to the givers.

DEVERY AND HIS TRACK

Ex-Police Chief Tells how he Will Cater to Automobilists.

Having had the "honor" of an introduction to the Hon. William S. Devery thrust upon him last week, and the thruster having informed the doughty politician that the Motor World man was "one of them fellers what writes about automobiles," the reporter felt called on to enact the part, and so told the famous legislator that he was the subject of considerable interest to every owner of an automobile, because the automobilists had all heard that he intended to build a three-mile race track for their exclusive use.

In the vernacular of Mr. Devery, there was "somethin' doin'" right away. After describing where the property he intended to build this track on was located somewhere way in the wilds of New Jersey, Mr. Devery said:

"See, here, sport, don't you think Willie Vanderbilt and them fellers would just be tickled to death with a track like mine? You see, the geezers won't let them go roarin' and tearin' around the roads with these White Ghosts and Red Devils, and so where they goin' if they don't come to my track? I tell yer, sport, the idea's got to make good. It's like takin' candy from the baby. What'll yer have, sport?"

When the gentleman in the white jacket behind the mahogany produced it and just before the swinging door closed on the reporter, Mr. Devery shouted:

"Say, sport, when I get me track ready come around, I want to see you. There'll be somethin' in it for you. Understand?"

Recent Incorporations.

Kittery, Me.—The Bonton Automobile Co., with $500,000 capital, nothing paid in. The officers are: President, Horace Mitchell, of Kittery, and treasurer, John M. Heath, of Lynn, Mass.

Providence, R. I.—Goodson Electric Ignition Co., with $10,000 capital, to manufacture magnets, spark plugs and electrical appliances of all kinds, gas engines, launches, automobiles, motor cycles and vehicles self-propelling. The incorporators are John M. Walton, Otto Carlborg and Royal H. Gladding.

Logansport, Ind.—The Western Motor Co., with $400,000 capital, to manufacture gasolene engines. The directors are Robert Parker, E. A. Rutenber, F. B. Wilkinson, E. H. Wolcott, J. F. Digan, G. E. Kessi, George W. Funk.

Cleveland, O.—American Motor Carriage Co., with $500,000 capital, to manufacture motors propelled by electricity and compressed air.

Jersey City, N. J.—Sterling Power Vehicle Co., with $1,000,000 capital, to manufacture automobiles, etc. Incorporators, R. H. Dana, J. F. Jewell and G. H. Taylor.

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WANT LICENSE LAW

Legislature of This State to be Asked for one —Supervision of Construction, Too.

In so far as the Automobile Club of America and the National Association of Automobile Manufacturers, through their committees, may be held to speak for the automobilists of this State, a licensing law, to apply to owners and users of the motor vehicle, will be advocated and asked of the legislature of this State.

It is even proposed to go further and ask for a supervision of the manufacture of automobiles, at least so far as brakes and other safety appliances are concerned.

The committees of these two organizations met at the club rooms of the A. C. A. on Monday evening.

The sentiment in favor of license and of supervision of automobile construction was unanimous, those present favoring control by the State, with reciprocity among the States in recognition of one another's licenses ultimately in view.

A. R. Shattuck and W. W. Niles represented the club in the conference, and S. T. Davis, jr., F. M. Lande and H. Ward Leonard spoke for the manufacturers. Mr. Shattuck was chosen chairman of the committee and will call another meeting of the joint committee two weeks hence.

The discussion was merely preliminary and informal, and no precise form of legislation was decided upon for advocacy. It was agreed that license would be a safeguard against accident and result finally in securing more reasonable speed limits. Supervision of construction in the way of compelling sufficient brakes and improved safety appliances were also advocated.

A State commission, to be appointed by the Governor, which should name and control examiners in various counties, was suggested. The question of the revocation of licenses for violation of highway laws was a detail not touched upon.

Meanwhile the municipal ordinance introduced in the board of aldermen at the instance of the highway committee of the League of American Wheelmen slumbers in the former body.

Worcester's New Club.

A new automobile club has been formed in Worcester, Mass., in place of the old one, which for some time has been afflicted with innocuous desuetude. The constitution of the old club has been adopted. The officers of the new organization are as follows:

President, George B. Cutting; vice president, Dr. R. M. Garfield; secretary, H. E. Shilands; treasurer, J. A. Harrington; chief marshal, F. S. Taylor; board of governors, Dr. R. M. Garfield, F. S. Taylor, B. A. Robbins, T. J. Toner, Alexander Bowler, O. M. Savals and Frank Goddard.

Was a Minute Late.

By a fine splitting of hairs the committee in charge of the recent Reliability Trials of the Automobile Club of Great Britain has fixed the official rating of the White steam carriage at 1,799 marks, or one short of a perfect record. The penalty was inflicted for the heinous crime of taking one minute in excess of the time allowed for cleaning at the garage. By this ruling the Wolseley, a British car, has the honor of being the only one of the contestants to reach the coveted 1,800 mark. The proverbial fondness of the Briton to "win, tie or wrangle" is thus once more evinced.

An Automatic Tank Filler.

Little things count for much in the general sum. Who has not growled at the length of time required to fill the gasolene tank and the necessity for giving the operation constant attention?

The little device illustrated is designed to obviate all this. It is a tank filler, which also acts as a filter for the gasolene and screws on to the gasolene can when the stopper is removed.



When in position the filler is inserted in the tank and the can turned upside down. The can drains itself dry if the filler is made the lowest corner, and not a spot of gasolene is wasted. When the tank is full no more gasolene flows from the can, as when it reached a certain point the air bypass into the can is stopped, and, the pressure in the tank being greater than in the can, the flow ceases. The filler is made with and without a tap, as shown in the illustration. With the tap the flow may be stopped at any moment, and the can turned right end up without spilling a spot of gasolene.

Races at St. Louis.

In connection with the St. Louis, Mo., Fair, a number of automobile races will be run this week, the events to be under the auspices of the St. Louis Automobile Club. The complete program is as follows:

Tuesday, October 7—Race, five miles; for steam, gasoline or electric machines; not more than 10 horsepower.

Wednesday, October 8—Special race, one mile, open to the world, for steam, electric or gasoline machines.

Wednesday, October 8—Handicap race, five miles, for gasoline machines only.

Thursday, October 9—Race, five miles; speed contest. Manufacturers, dealers and agents excluded. For steam, gasoline or electric vehicles.

Thursday, October 9—Motor cycle handicap, five miles, for motor cycle machines, open to the world.

Friday, October 10 Race, open to the world, ten miles, championship endurance race, for steam, gasoline or electric machines.

Saturday, October 11—Race, steam machines only, five miles.

TAKE YOUR CHOICE

Of the Two Kinds of Testimony—Jury Mulcts Automobilist. However.

A suit that is attracting an unusual amount of attention, and is fraught with great importance to automobilists, is now being tried at Trenton, N. J. The plaintiff, Joseph M. Hughes, asks for $50,000 damages from Felix Warburg, for injuries inflicted by a runaway of his (Hughes') team, caused, it is claimed, by Warburg's automobile at Long Branch, N. J., last summer. Both the parties to the suit are wealthy business men of New York.

The testimony brought out was of the most conflicting character. Witnesses for Hughes stated that Warburg's vehicle was going at eight miles an hour, while others were certain it was sixteen miles an hour.

John H. Sparrow, Hughes's coachman, who was injured, was positive that the automobile was going at a rate of more than eight miles an hour. He declared that by glancing at a machine for two seconds he could come within half a minute of its speed.

Dr. J. B. Reed testified that Mr. Hughes suffered an injury of the spine from which he would never recover, and that his nervous system was shattered. Dr. R. B. Kimble testified that he found no permanent injury to Mr. Hughes's spine.

Miss Riley, who was riding with Warburg at the time of the accident, testified that the automobile was driven very slowly along the Ocean Drive and that it had come to a full stop before Mr. Hughes's horses made their wild dash into the Seabright Inn.

Her testimony was corroborated by Charles Martin, the chauffeur.

A dozen coachmen and other eye-witnesses of the accident later contradicted the testimoney given in Mr. Hughes's behalf earlier by either averring that at the time of the accident the automobile was standing still or moving at a very slow pace.

Several of the witnesses who examined the wrecked vehicle testified that had the yoke strap on the pole of the Hughes coach been sound the accident would have been averted. One of the witnesses testified that the leather in the yoke strap was rotten.

On Tuesday the jury returned a verdict for $12,500 in favor of Hughes.

In view of the excessive damages awarded and for other reasons, the American Automobile Association will appeal the case on behalf of Warberg. President Scarritt made a statement to this effect Wednesday.

Hussey Leaves Cadillac Co.

Patrick Hussey, who but recently joined the Cadillac Automobile Co. of Detroit, Mich., as superintendent, suddenly severed his connection there last week.

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ROADS OF TARRED SLAG

They are Expensive, but Make an Almost Ideal Highway - The Process.

"The present system of road repairing is as follows" says a practical road builder:

"The road is disintegrated or 'opened' at the outsides to receive the covering (unless this is done the new patch is never secure); in some districts the road is scarrified, and thus further disintegrated, the new material is then placed on the surface, and if a roller is available the whole is then well rolled, and when smooth the process of making the material bind or stick has to be carried out. This is generally done by thoroughly watering the surface, binding the same with sharp road scrapings and forming a thick sticky mass, which is swept into every crevice and the whole rolled until it is consolidated. It will thus be seen that water and dirt form a very large and important part in road making, and, however well one may try to get a perfectly consolidated road, this water and dirt cannot form a wear resisting surface, it cannot keep the wet out of the road, and it cannot stand so as to defend itself from the weather and atmospheric influences.

"With this course of procedure carried out it is only necessary to imagine a few days' traction engine or any other kind of traffic that will 'lick up' the surface, and the result will be easily understood, for unless the road is waterproof the material underneath becomes saturated, and is always subject to wet soaking in after every shower, or, worse still, after every continued spell of wet weather. When followed by frost the result is almost too fatal to imagine, and certainly disastrous from a financial point of view to deal with.

"As to the remedy, very many efforts have been made to find a material strong enough to bear heavy traffic, not to be more slippery than possible, and to be capable of being made into a road that would present a weatherproof face and obviate the use of the water and dirt compound now used as 'bind.' The use of tarred material has been the idea that many surveyors have worked on, but the results have only too often been most disheartening. It has been found next to useless to tar granite or syenite, because the material itself would not absorb the tar; the result has been that after forming the road well to start with, exposure has caused the tar to melt, wear or disappear, and after a short while the road has become not only rough through disintegration, but, from a surveyor's point of view, a hopeless failure. Many sorts of material have been tried for tarring, but they have almost always been found either too soft to stand traffic, though they would absorb tar, or too hard to absorb tar, while hard enough to stand traffic. The writer after repeated trials has found that the most satisfactory material yet produced is furnace slag of the very best hand picked quality, but unless this is well warmed and perfectly dried before being used it has too often been a failure. The cost of drying the material is very great, and the process is such that if the work is to be relied on special floors must be constructed, and all the material has to be turned and turned again by hand labor at least five times, so that each portion shall receive its proper quantity of tar. It will easily be understood that the area required for this drying process places it out of the question for any extended use of the material.

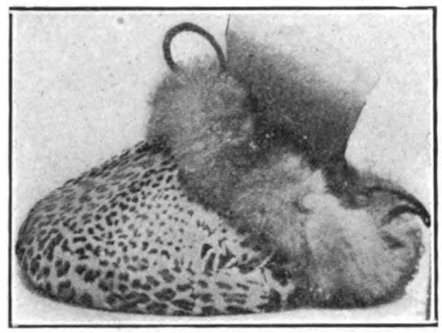
"With this explanation the writer thinks it will at once be seen that tarred roads, according to present methods, must be expensive, slow in manufacture and too often unreliable, but when once properly made certainly answer admirably and fulfil all that seems required. When the tarred material is made the saving in the construction of the road is great, for no sweeping dirt or watering is necessary, dust and mud are reduced to a minimum, loose stones are unknown, and the damage to the face by traction engines is not appreciable, while for ordinary traffic or motoring the road is ideal.

"The writer is pleased to turn to the result of some patient hard work and to be able to state that he has, he hopes, overcome the question of expense and floor space in the manufacture of tarred materials. He has found out how the whole of the expense of drying slag as well as the making by hand labor can be saved, viz., by having the material tarred just as quickly as it is broken and the whole made reliable by being regulated in its manufacture by machinery, instead of being left entirely to the discretion, or want of discretion, of the mixer.

"The financial result will be easily appreciated when the writer can confidently state he can make perfectly tarred slag roads at the present cost of an equal quantity of ordinary granite or syenite material untarred; that the cost of consolidation will be about one-half the present cost, and that the life of the road will be at least five, if not ten, times as great as the present road, while from the general public point of view the great reduction, if not the total abolition, of dust, mud, the prevention of the irritation that is caused by constantly repairing roads, and the improved sanitary condition of the roads themselves will be almost inestimable."

To Keep the Feet Warm.

Adequate protection of the extremities is a matter of the first importance, as automobilists speedily learn. The boot cover shown



is intended to be worn over ordinary boots. It can easily be slipped on and off, and does not interfere with the free use of the control pedals.

Cannot Bar Automobiles From Druid Hill.

In spite of the fact that the Maryland Legislature last winter took the matter out of their hands, the commissioners of Druid Hill Park, Baltimore, are still endeavoring to exclude automobiles from certain roads in the park. For several years they succeeded in barring them altogether, but a section of the act referred to changed all that. It reads as follows:

"The Board of Park Commissioners is authorized and empowered to regulate the speed of vehicles and equestrians within one mile of the approach and within the limits of said parks and squares, and to impose the fines provided for in the preceding section for the violation of any regulations it may establish in this connection, to be recovered as therein provided; but the said Board of Park Commissioners shall have no power to pass any rule or regulation excluding automobiles from the free use of the parks, squares and roadways under its control; nor shall the said Board of Park Commissioners have authority to pass any rule or regulation requiring vehicles, equestrians or automobiles to travel at a slower rate of speed than six miles per hour."

Last week the commissioners asked the city solicitor for an opinion as to their right to exclude automobiles "or other wheeled vehicles of that character" from either of the roads on either side of the duck lake in Druid Hill Park, or from passing around the Druid lake drive.

The solicitor replied quoting the act, and adds significantly: "If this section had been brought before the board the necessity of asking any opinion upon the subject would have been avoided."

Two Timely Tips.

When a battery or accumulator becomes run down to such an extent as to refuse to produce a spark an ignition spark of sufficient power may often be obtained by setting a passenger to vibrate the trembler with the fingers. Such a method has been found sufficient to run the car a distance of a mile or two.

A good temporary repair to leaking water pipes or radiators is effected by covering the pipe around the fracture or joint with white lead and binding with tape. The tape should be well smeared with the lead as it is wound round the pipe, the edges of the bandage being well leaded. When dry this makes quite a good repair, and one which which has been known to last for a considerable time.

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EXHAUST VALVE TROUBLES

Some of the Causes to which They are Attributable—Bad Designing.

"Though much has been written on the causes of exhaust valve breakages, one reason has rarely, if ever, been mentioned," says a well posted automobilist.

"Among the explanations usually given are: (1.) Weakness in the neck between head and spindle. But the proper form for this important point is so familiar to engineers that breakage from this defect ought never to occur. (2.) Unsuitable material. This also should not figure as a cause of failure. Though less common, probably the better practice is to make the valve head and the spindle of different material. (3.) Faulty methods of valve fitting. The method of lift adopted should be such that the lifting contact (the lifter) remains always at right angle to the valve spindle. Departure from this principle tends to strain the spindle and produce uneven wear. (4.) Throttle of the exhaust by insufficient area in the valve, the exhaust pipe, or the silencer. Any defect here may lead to broken valves. With choked exhaust the pressure left in the cylinder, combined with the spring, may produce serious hammering of the valve on its seat. In time this leads to brittleness and fracture.

"But all these causes have been so often discussed, and are so well understood, that there is no longer any excuse for their existence. Another cause, however, of very different nature, is now suggested as a probable source of much of the irregular wear and ultimate fracture of exhaust valves. Those conversant with the construction of horizontal plunger pumps will recognize a defect frequently found in otherwise well designed machines. This is the placing of the valve seat on a level with the waterway.

"The effect of such an arrangement is that not only is the discharge greater on one side than on the other, but the water, diverted into a new direction while in the act of passing the valve, exerts a tilting force on it, pressing the valve towards the waterway. The results are irregular wear, sticking and hammering of the valve on its seat.

"Now the usual disposition, in the vertical motor, is similar—a horizontal port with a vertical exhaust valve, the latter seated on a level with the former. An analogous state of affairs is thus established—a flow of gas, in lieu of water, being diverted into a new direction while passing the valve. There is, therefore, the same unequal discharge with the similar tilting action, and tendency to force the valve from its true position. But there is this difference. In the pump the stroke is comparatively slow, the flow tardy, the pressure low, the valve, spindle, seat and guides cold, and in the best condition to resist wear; whereas in the motor the valve beat is extremely rapid, the gas flow swift, the pressure high, and all surfaces so highly heated as to be in the worst condition to withstand attrition and deformation.

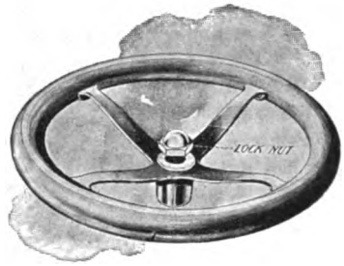
"Thus the evils of bad design in the pump are much aggravated in the case of the motor, the tilting action being greater, and the irregular burning and side wear more rapid. The remedy in both cases is the same. The valve seats should be kept respectively below the waterway or the gas passage, so as to permit the flow of water in the one case to rise upward until clear of the valve before taking a new direction, or the rush of gas in the other case to acquire a straight downward course before reaching the valve. All tilting action is thus eliminated.

"Naturally, the usual precaution of fully equal area in the annular space round the valve to that of the valve outlet must be preserved."

Steering Wheel Construction.

The general use of steering wheels on motor cars makes their construction of interest, an example of which is here shown in the wheel made by Charles E. Miller, 97-101 Reade street, New York.

The rim of the wheel is built up from three plies of rock maple each having a



varying direction of grain, thus insuring a very rigid construction and a true circle. The spider, or web, is made of brass, highly polished, with a heavy hub. The arms of the web are engaged by the use of heavy gauge brass screws. The hubs are bored ⅞ inch standard, with ¼ inch keyway, but are designed to permit 1⅛-inch bore. The hexagon cap nut of polished brass adds a finished appearance, and serves the purpose of a lock nut.

The wheels can be furnished in natural hard oil finish or in a very durable mahogany.

Technology Instruction.

At the London Polytechnic Institute there will be given during the coming winter session a special course of instruction on the technology of carriage and motor car building and drawing. Facilities will be offered so that students may gain an insight into the mechanical properties and the various means of transmitting power to the road wheels. The workshop construction will include making drawings and working through them, the students in the day school connected with the Polytechnic being now engaged in the construction of the body of a four seated motor car, while the Polytechnic School of Engineering has nearly completed a steam motor for the carriage building school.

ITS CAUSE AND REMEDY

Side Slip Discussed by a Practical Automobilist—What Not to Do.

"There appears to be an idea that side slip is unavoidable, and also that when it occurs one is absolutely helpless to meet the emergency and must abide by the result. Now this is by no means the case, and it is a great pity that such ideas should be allowed to go uncontradicted, since they are calculated to give a very erroneous impression as regards the safety of the automobile," remarked an automobilist.

"Side slip may roughly be divided into two classes: (1) The side slip which occurs when one is going fast over a treacherous and greasy road, and (2) the side slip which occurs when one is going slowly. In the former case it is safe to say that no one but the driver of the vehicle is to blame, as to travel at a high rate of speed over a greasy surface is the height of folly, and one usually finds that the driver in this case has absolutely no notion of how to treat a slip when it does occur; in all probability he will apply his brake, the result being that the vehicle will turn completely round and crash into anything or anybody in close proximity. If a driver is going to be foolish enough to travel fast over a greasy road let him at least treat the slip in the best possible way. He should withdraw the clutch, so that the vehicle is only running by its own impetus, and then do his best with the steering.

"In the second case, when a vehicle is proceeding at a slow rate of speed, a side slip is only likely to occur in the presence of sloppy tram lines, or in the event of the vehicle being a badly designed one. In the first case, owing to the slow speed at which one is travelling, no harm is likely to result, seeing that the slip can easily be righted; in the second case, viz., with a badly designed vehicle, a slip may take place on almost any occasion if the road is at all greasy, and especial attention may here be drawn to the designs of different automobiles.

"If a car is to be free from side slip it should have its wheel base proportionate to its power and speed, and (what is most important) its body should not overhang the back wheels—that is, the body should not project out beyond the rear wheels. There is no danger to be feared from side slip if a properly designed vehicle is used, which is also driven with proper care and consideration. The sudden application of the brake on a greasy road is always liable to swing the back of the vehicle round."

Electric connections should always be kept as clean as possible, and where not otherwise protected should be covered by wrapping with rubber tape, as supplied by any electrician.

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THE CASUALTIES OF THE WEEK.

(Continued from page 43.)

New Haven, Conn., conductor and two passengers of trolley car injured in collision.

OCTOBER 2.

Albany, N. Y., John McGuire struck by trolley car; killed.

Brooklyn, N. Y., Mrs. E. Wells fell from trolley car and fractured both wrists.

Bangor, Me., Frank Fish, aged 7, trampled on by horse; will probably recover.

Newark, N. J., Fannie Stevens struck by trolley car; badly bruised.

New York, Mrs. Reybold knocked down by cab; badly bruised.

Providence, R. I., John Grimes badly burned by coming in contact with live wires; may recover.

Greenfield, Mass., two men were killed and five injured in collision on Boston & Maine Road.

Bloomfield, N. J., J. R. Conlan, carriage struck by trolley car; will probably die.

Boston, Mass., Geo. Walters, aged 8, leg caught in carriage wheel and torn off; may recover.

Parkersburg, W. Va., two men killed and five hurt by collision on B. & O. Road.

New York, G. Van Glahn and Alfred Fisher thrown out and bruised by collision between their carriages.

OCTOBER 3.

Rawlins, Wyo., engineer and a number of trainmen were seriously injured in train wreck.

Boston, Mass., John Tobin, a painter, fell from staging and fractured arm in two places.

Boston, Mass., A. L. Johnson struck by trolley car; concussion of brain.

Cohasset, Mass., John Murphy came in contact with third rail; will die.

Eastport, Me., three-year-old son of F. Rufus was run over by farm wagon; died.

Milford, Mass., Mrs. E. S. Draper thrown from carriage owing to horse becoming frightened by trolley car; badly cut and bruised.

Long Island City, N. Y., unknown man struck by trolley car and killed.

Washington, D. C., Engineer Perdue and Fireman Keys killed in collision on Penna. R. R.

OCTOBER 4.

Melena, Mont., two men were killed and seven injured by collision on Northern Pacific Road.

Williamsport, Pa., Engineer Wheeland and Conductor Stringer were killed and Fireman Shaffer was seriously injured in collision on Erie Road.

West Newton, Mass., E. Huston struck by cab and severely cut about head.

Boston, Mass., Jacob Lewis, aged 8, run over by a team; sustained abdominal injuries.

Newark, N. J., A. M. Martigicomo run over by a cart; killed.

Anderson, Ind., John Walsh struck by trolley car; killed.

OCTOBER 5.

New York, Charles Hearne fell on third rail of Brooklyn Bridge; killed.

Jersey City, N. J., Wm. Sullivan struck by Erie train; killed.

New York, Mary Tracy fell while skating on rollers; died.

New York, Mrs. Mary Gorman struck by trolley car; removed to hospital.

New York, Howard Rupp struck by elevated train; killed.

Batavia, N. Y., Sherman Reed and wife killed by explosion of oil stove.

AUTOMOBILE ACCIDENTS.

OCTOBER 1.

Pittsburgh, Pa., Florence O'Neill ran into a pile of sand and wrecked his vehicle. He was thrown out but not injured.

OCTOBER 2.

New York, Victor Newcomb struck by an automobile; injuries said to be serious.

OCTOBER 4.

Brooklyn, N. Y., Jos. Costa, 16 years old, struck by an automobile; received scalp wound and contusion of left foot.

BRIEF NEWS NOTES

Fred C. Dickerson has severed his connection with the Munger Tire Co.

An automobile race meet for Buffalo, N. Y., is talked of, to take place at Kenilworth Park.

Mohler & De Gress, Long Island City, N. Y., have removed to larger quarters, at 390 Webster avenue, that city.

The sum of $450 has been granted by a British association for research into the resistance of road vehicles to traction.

It was a Foster steam carriage which W. H. Moore, of Watertown, N. Y., used with such marked success on his recent tour, and not a gasolene car.

A dividend of 10 per cent has been declared by the Daimler Motoren Gesellschaft, of Canstatt, Germany, out of profits of a little less than $100,000 on a year's business.

A line of motor 'buses is to be put in operation on the island of Corsica. The route will be between Vico, Ajaccio and Sartene, and both passengers and the mails will be carried.

The Pittsburg (Pa.) Department of Public Safety has contracted with a Chicago firm for an automobile hose wagon. It will, when completed, accompany the steam propelling fire engine now in use in going to fires.

In addition to its line of steam cars, work on which is now in progress, the Meteor Engineering Co., Reading, Pa., is engaged on a gasolene model. It is hoped that this will be ready in time for the show in January.

The judiciary committee of the Milwaukee, Wis., common council has been censured by the Milwaukee Automobile Club for recommending a speed ordinance without permitting the local automobilists to be heard.

For the benefit of foreigners the Touring Club of France has decided to erect sign posts at all dangerous gradients on roads, with indications that can be understood by all nationalities. Arrows painted on the sign mean, if diagonal, go slow; if vertical, to get down from the automobile; if horizontal, that there is a dangerous curve in the road. The information is equally good for cyclists.

At the entrance to the grounds of the Essex County Country Club, West Orange, N. J., the following notice has been posted: "Automobiles not allowed to use the road. Enter club grounds by Mount Pleasant avenue or Northfield road."

Because an automobile is alleged to have caused the death of a horse in Lansing, Mich., Alderman Dodge, of that city, has given formal notice that he will introduce an ordinance for this purpose at the next meeting of the council.

Instead of the Hansen Automobile Company, the makers of the Cleveland runabout and touring car will hereafter be known as the General Automobile and Manufacturing Co. The new address of the makers is 1312 to 1330 Hamilton avenue, Cleveland, Ohio.

Accumulators, when fully charged, will register 4.6 volts. This will soon drop to 4.4 volts, which is their normal capacity. They should never be run below 3.8 volts, or the plates are liable to become damaged by buckling. Always test with a voltmeter.

Another race meet was held at the Minnehaha Driving Park, Minneapolis, Minn., last week. Seven races were run, two of them being for motocycles, the others for automobiles. Prizes were also given for exhibitions of driving by both women and men drivers.

In addition to its efforts to bring about a uniform system in the spacing and number of lugs for single tube tires and rim sections for double tire tubes, the National Association of Automobile Manufacturers has undertaken to bring about the adoption of a standard for solid tires.

An English M. P. prophesies that farmers will, in order to accustom them to automobiles, have to breed for nerve as well as stamina, shape and action. They would then need to enlarge their prize lists by classes for nerve, which he believed would excel the leaping competitions in interest and excitement.

Not only is a bad impression given to the public by the absence of mufflers, but in traffic horses are undoubtedly far more apt to be frightened by the noise of the explosions than anything else. Squeaking brakes are also a great nuisance, and a mere drop of oil would cure this without impairing their stopping qualities.

A result of the fact that the Mexican Minister of Public Works is a motoring enthusiast is said to be the cause of the recent schemes for the development of roads in Mexico. All the highways in the federal district of Mexico City are to be put under thorough repair, and new roads of a length of 124 miles are to be built.

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GIVE TWO VERSIONS

Hackman Says he was not to Blame for Collision and Wants Damages.

Charges and counter charges of contributory negligence mark a case which is being tried in the Roscoe, N. Y., Municipal oCurt, in which an automobile and a team of horses figure.

Suit was brought by Luther E. Mull, a hackman, against Park Densmore, who he alleges caused his team to run away by handling his automobile carelessly. The hackman demands $375 damages for injury to one of his horses and the wrecking of his coach.

The accident which gave rise to the suit occurred on August 28th last. Mull alleges that at 6 o'clock in the evening on that date his team was standing in front of his home on Hickory street securely tied. The team was facing east and Densmore came along in his auto from the west. Mull states in his complaint that Densmore had a steam automobile and that he was running it at a "great and unlawful rate of speed." He further alleges that the exhaust was open and that the machine produced a noise "uncommon and terrifying" to horses.

When the auto was alongside, the horses were so terrified that they broke from their fastenings and dashed down the street ahead of the automobilist. After traveling some distance Mull says the team struck an obstruction and one horse was injured so badly that he could no go any farther and the animals came to a stop. It is alleged that in addition to the injury to the horse the coach was completely wrecked.

The plaintiff states that all of this could have been prevented by ordinary precautions and that it was purely the negligence and carelessness of the defendant which caused the accident. An itemized bill of damages is presented as follows:

Damage to coach, $225; loss of double harness, $50; damage to horse, $10; for coach hire while damaged coach was being repaired, $75; for two nights' loss of work, $15; total, $375. Judgment is asked for this amount.

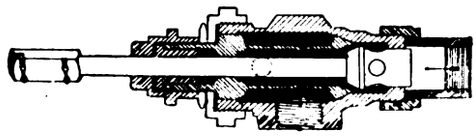
In answer to the complaint of Mull the defendant makes a general denial. He denies every allegation in the complaint and states that negligence on the part of the plaintiff contributed to the accident and that it was not solely due to negligence on the part of the defendant.

Alcohol Exhibition at Barcelona.

An international exhibition is to be held in Madrid in October next, says El Autovolismo Illustrado of Barcelona, in furtherance of the use of alcohol for lighting and for motor power purposes. It will be under the patronage of King Alfonso XIII. The communications received from France and Germany lead the promoters in Spain to hope for a large number of foreign exhibitors, and that all the really practical inventors will also be represented. The sites will be gratuitous, and exhibitors will have no other expenses than those of transport and installation. The Spanish railway companies have promised their lowest terms; while the Chamber of Commerce will also give its warmest support to the exhibition.

Acme Safety Throttle.

Operators of steam vehicles sometimes experience difficulties in getting regular steam admission with an ordinary quick opening throttle, which has a tendency to either open to its full capacity or to close up entirely. When these conditions come about they not only give the vehicle an unsteady movement, but they are wasteful of steam. To overcome these troubles the Nolte Brass Co., of Springfield, O., is making the Acme safety throttle, here shown. The valve is provided with double seats, the steam passing from the bottom through a cylindrical stem that is bored with four holes. The steam passes through these, thus throttling it at the lower seat to insure a gradual supply. Steam then passes around the stem and through the upper seat to the engine. When the engine is running the upper seat, which is the closing seat, is at all times full open, thus causing little wear at this point. The regulating is all done at the lower seat through the four holes.



In operating, the valve has its full capacity when the hand lever is midway between the extreme forward and backward positions. When starting, the lever is thrown full forward, and then gradually worked back toward the centre. The vehicle should be controlled in this forward half of the two extremes. Accidents from excitedly working the lever the wrong way are avoided, as the steam is entirely shut off at either extreme point.

Care should be taken to see that the thread on the pipe making the connection is not under size or cut so long that when screwed into place the pipe touches the stem on either side or interferes with the oil cup in the back. The pipe connections are one-half or three-quarters inch. The valve can be set in either vertical or horizontal position. The packing is compressed with a gland and the nut locked. There is a boss on the back of the valve that can be tapped for an oil cup, if desired. To remove any grit that has become imbedded in the seat both the valve seat and the stem can be removed without disconnecting any pipes. Valves are packed and tested to 300 pounds pressure, and are made of bronze steam metal.

After six months' work, a St. Louis, Mo., engineer has just completed a five horsepower machine, with a speed of 18 miles an hour, entirely the work of his own hands.

DELIVERY WAGON TEST

British Club has one Under Contemplation—A Mistake Builders Make.

"For some time the Automobile Club of Great Britain has had under consideration the advisability of holding a trial of motor vehicles suitable for use as delivery vans. Many important trials have been held by the Liverpool branch of the club, and by the War Office, of motor vehicles suitable for carrying heavy loads. No complete trial has, however, hitherto been held of vehicles suitable for the rapid transport of loads of not more than about a ton," says the Car.

"Some commercial houses have been induced to use motor vehicles for delivery purposes, with the result that they have come to the conclusion that motor vehicles are useless for this purpose, owing to the fact that they have been supplied with vehicles the engines, frames and gears of which were originally designed for luxury carriages to carry four persons, but which have unthinkingly been adapted for the far more trying work of delivery vans, by the simple substitution of a van body for a passenger body. Such experiments are doomed to failure, seeing that considerable strain is imposed upon a delivery van by the frequent stopping and starting, and also in consideration of the fact that it is not likely to receive as delicate treatment at the hands of a van driver as it would receive at the hands of a private owner.

"The majority of makers have had their works fully occupied by making cars for passenger vehicles, and have not given attention to the important branch of the motor business connected with light delivery vans. It is believed, however, that a serious trial of delivery vans be announced to take place, say, about twelve months hence, and makers be supplied with specifications of the two or three classes of delivery vans which are required by the big houses in various parts of the United Kingdom, they would be willing to turn their attention to the design of manufacture suitable for vehicles for the purpose.

"The committee are therefore inviting the leading commercial houses, railway companies and chambers of commerce to co-operate by sending representatives to a conference in November, and by subscribing to a trials fund, so that really substantial prizes may be offered for competition."

Contests Stimulate Business.

Nothing better shows the value of scheduled events for motor vehicles than that the week after the Ardennes race, orders for eighty of one make of vehicle were given by different private purchasers, who had been waiting to see the results of the race before deciding finally.

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The Week's Patents.

709,859. Motor Vehicle. Walter C. Baker, Cleveland, Ohio. Filed Feb. 14, 1902. Serial No. 94,021. (No model.)

Claim.—1. The combination in a motor vehicle, of the body, the running gear including the rear axle; and a motor, said motor being supported mainly from the rear axle and means for attaching the motor to the body of the vehicle, said means comprising a rocking bar pivotally secured to the under side of the vehicle body, and hangers pivotally secured to the opposite ends of the said rocking bar and pivotally connected to the motor, substantially as set forth.

709,866. Carburetter. Edouard Bouchaud-Praceiq, Angouleme, France. Filed Mar. 29, 1901. Renewed Aug. 26, 1902. Serial No. 121,095. (No model.)

Claim.—A carburetter comprising a receptacle completely filled with porous material adapted to retain hydrocarbons and which is pervious to the passage of air to form a combustible mixture, and a cock consisting of two concentric tubes, the outer one being stationary and having a helicoidal opening and the inner one forming the rotating plug and having a straight groove, the crossing of which with the helicoidal opening determines the level of the orifice, whereby said level can be varied by the turning of one tube relatively to the other.

709,877. Motor. Charles J. Cullen, Jersey City, N. J. Filed Nov. 14, 1901. Serial No. 82,330. (No model.)

Claim.—1. A motor comprising a fixed crank shaft, a plurality of cylinders mounted to rotate around the crank shaft, pistons in the cylinders having connection with the crank of the crank shaft, a two section driving shaft, and compensating gear connections between the driving shaft sections and the cylinders, substantially as specified.

709,949. Valve Gear. Paul H. White, Indianapolis, Ind., assignor to White Steam Wagon Company, Indianapolis, Ind., a Corporation of Indiana. Filed Oct. 3, 1901. Serial No. 77,375. (No model.)

Claim.—1. In a valve gear, the combination of a pair of eccentrics, a pair of straps and eccentric arms mounted on said eccentrics, a pair of valves, intermediate connections between each valve and one of the eccentric arms, means for engaging and guiding each of said eccentric arms, and means for shifting said guiding means so as to simultaneously and coextensively affect both of the eccentric arms.

709,959. Vehicle Tire. Frank P. Brining, Westgrove, Pa. Filed Feb. 14, 1902. Serial No. 93,992. (No model.)

Claim.—1. A felly having an annular groove formed in the same, a ring of soft rubber secured within said groove, undercut grooves formed in the walls of the groove, a rubber tire, beveled edges or tongues formed upon the tire adapted to fit within the undercut grooves, an opening formed through the tire, a slit formed from the opening to the inner face of the tire, beveled surfaces formed upon the outside of the soft rubber ring, beveled surfaces formed upon the inner face of the rubber tire adapted to fit upon the beveled surfaces of the ring, substantially as and for the purpose specified.

710,026. Lubricator for Explosive Engines. Carl W. Weiss, New York, N. Y., assignor of one-half to August Mietz, New York, N. Y. Filed Aug. 13, 1900. Serial No. 26,713. (No model.)

Claim.—1. The combination with an explosive engine having a chamber in which a partial vacuum is produced by the rearward movement of the piston, of an oil receptacle, a conductor to deliver oil from said receptacle to a port in the cylinder wall, said receptacle being below said port and said conductor terminating in said receptacle below the surface of the oil, and a vent from said port to said chamber whereby the flow of oil is induced by the partial vacuum in said chamber, substantially as shown and described.

710,203. Acetylene Gas Lamp. Arthur K. Miller, New York, N. Y. Filed Oct. 26, 1898. Serial No. 694,586. (No model.)

Claim.—1. A lamp comprising two vertically disposed receptacles placed side by side, interposed connections securing said receptacles together, one connection having a bore, a tube connected with and depending from said bore to conduct gas, and a burner connected with said tube, a cock to control the passage of gas from said tube to said burner, the other connection leading to said receptacles having a cock to control the passage of water through said connection, substantially as described.

710,204. Acetylene Gas Lamp. Arthur K. Miller, Waterbury, Conn. Filed Jan. 13, 1900. Serial No. 1,263. (No model.)

Claim.—1. A lamp comprising a pair of receptacles, braces secured to said receptacles near opposite ends, one brace having a bore communicating with both receptacles near their lower ends, the upper brace having a bore communicating with one receptacle, a tube extending between said braces and communicating with said upper bore, a burner connected with a bore in the lower brace, said tube communicating with the last mentioned bore, and means to control the passage of water between the receptacles, substantially as described.

710,274. Tire for Wheels. Everett Horton, Bristol, Conn. Filed May 28, 1902. Serial No. 109,313. (No model.)

Claim.—1. In a resilient tire for wheels, the combination, with an inner rim, of a segmental rim composed of segments having longitudinal ribs and grooves on their sides; springs interposed between said rims; and plates carried by the inner rim, and having flanges fitting over the ribs formed upon the segmental rim and entering the longitudinal grooves thereof.

710,278. Electric Battery. Timke H. Klinker, jr., and Richard Gabrielsky, Jersey City, N. J. Filed Apr. 5, 1902. Serial No. 101,605. (No model.)

Claim.—1. In an electric battery the combination of an inclosure, a positive electrode having upwardly projecting tubular members rising from a bottom thereof, a chambered negative electrode suspended in the centre between the upwardly projecting members of the positive electrode, and an exciting filling in contact with the said electrodes.

710,302. Internal Combustion Engine. John A. Prestwich, Tottenham, England. Filed Apr. 29, 1902. Serial No. 105,165. (No model.)

Claim.—1. The improvements in internal combustion engines comprising the combination of a compression cylinder, a working cylinder, a piston in the compression cylinder, a piston in the working cylinder moving in advance of the piston in the compression cylinder, a rotary valve, an air admission port in said valve coinciding at the proper time with an admission port in the compression cylinder, a discharge port in said rotary valve coinciding at the proper time with a discharge port from the compression cylinder, and a compressed air admission port to the working cylinder, an oil supply valve

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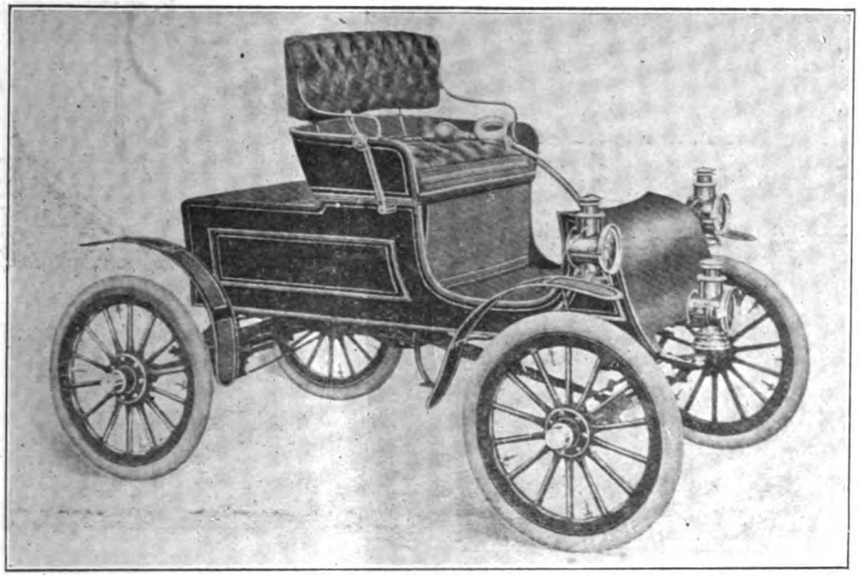
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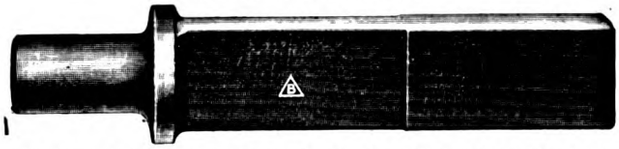
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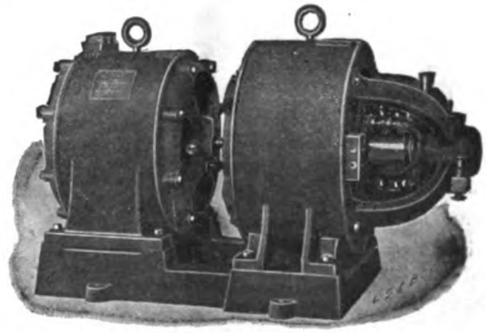
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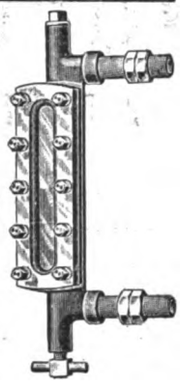
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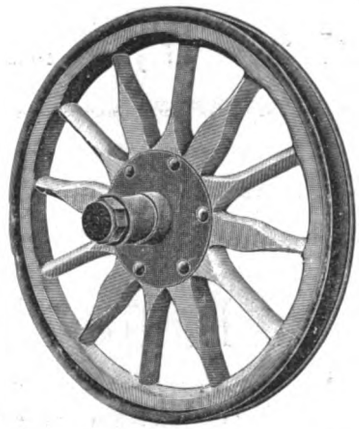
formed by an extension of said rotary valve, an oil charging port in said valve, a corresponding oil supply port in the valve casing, a compressed air inlet port in the path of travel of one end of said oil port and leading to the compression cylinder, an oil discharging port in the valve casing at the other end of the oil passage, connections between said port and the compressed air channel between the cylinders, an exhaust valve in the working cylinder, a means for actuating said exhaust valve by the rotation of the main valve, means for rotating the valve from the crank shaft of the engine, all substantially as and for the purpose set forth.

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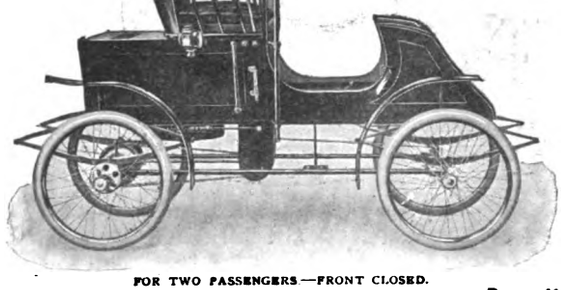


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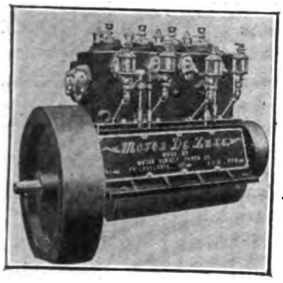
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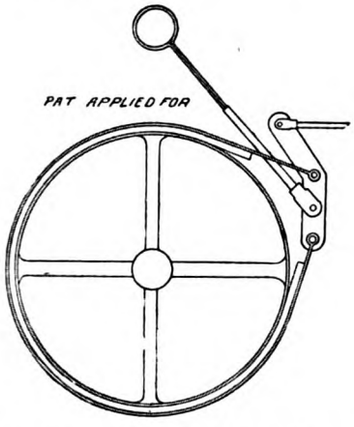
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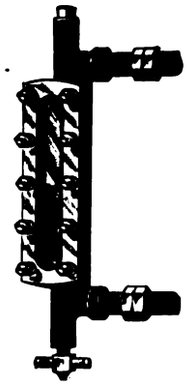
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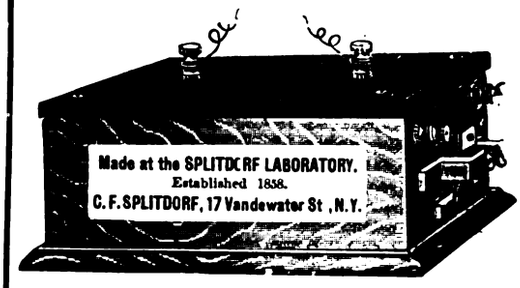
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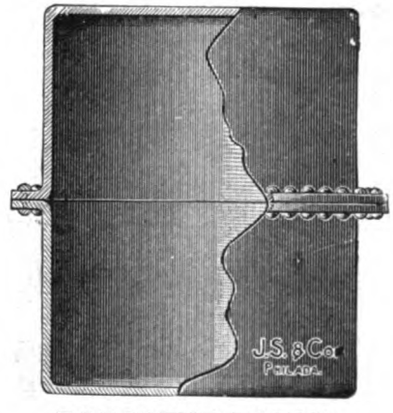
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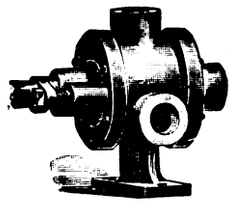


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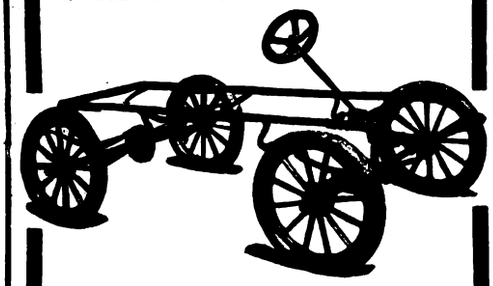
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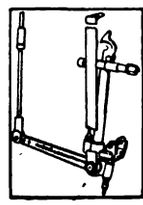
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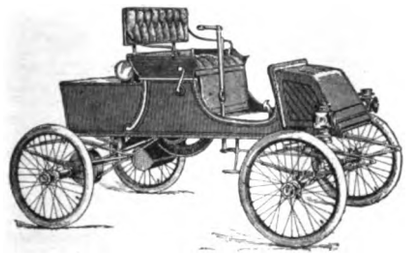
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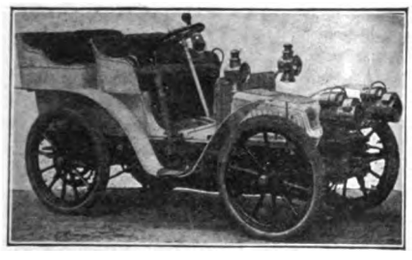
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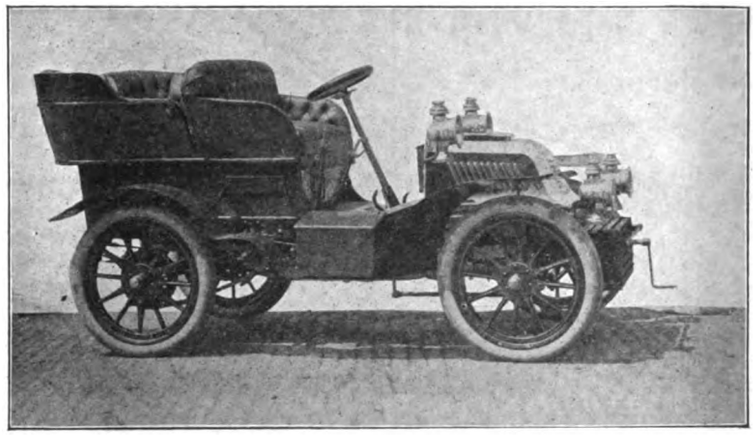
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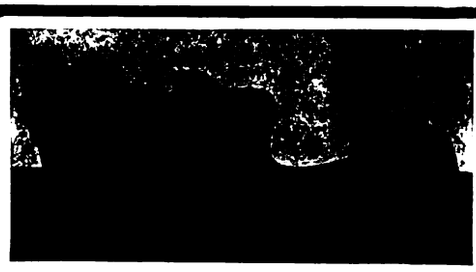
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MUNGER AUTOMOBILE TIRE CO.,
TRENTON, N. J.

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EXIDE BATTERY DEPOTS FOR FURNISHING, CHARGING AND CARING FOR EXIDE BATTERIES:

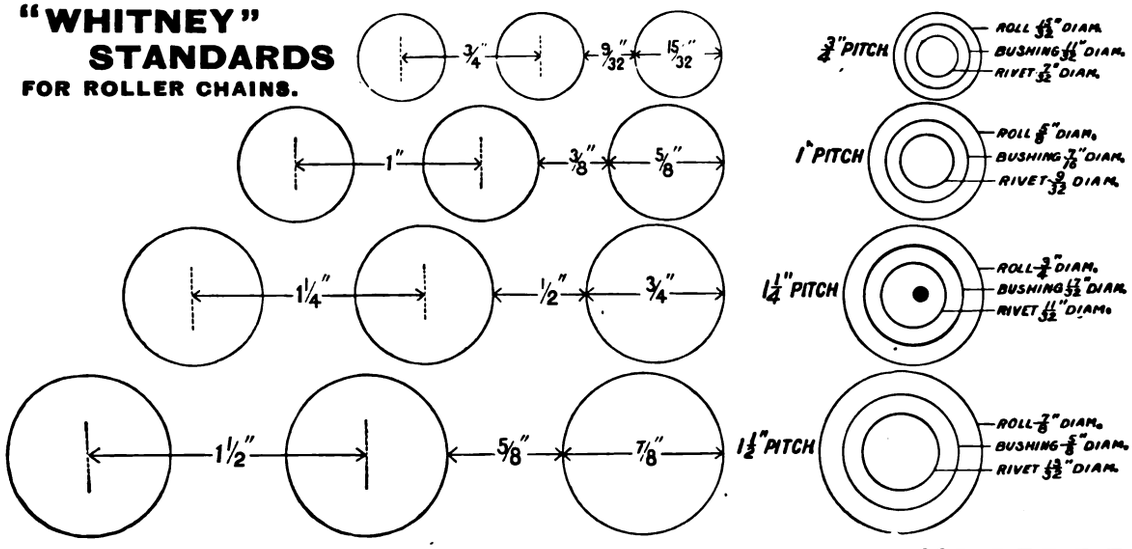
NEW YORK 148 West 18th Street. PHILADELPHIA, 250 North Broad Street. BUFFALO, 200 Pearl Street.
CHICAGO, 264 Michigan Boulevard. ST. LOUIS, 3937 Olive Street. DETROIT, 101 Woodward Avenue.

THE ELECTRIC STORAGE BATTERY CO.

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PHILADELPHIA, Allegheny Ave. and 19th St. NEW YORK, 100 Broadway. BOSTON, 60 State St.
CHICAGO, Marquette Building. BALTIMORE, Continental Trust Building, CLEVELAND, New England Building.
ST. LOUIS, Wainwright Building. SAN FRANCISCO, Nevada Block. DETROIT, Michigan El. Co., 101 Woodward Ave.
HAVANA, CUBA, G. F. Greenwood Mgr., 34 Empedrado St.

"WHITNEY" STANDARDS FOR ROLLER CHAINS.

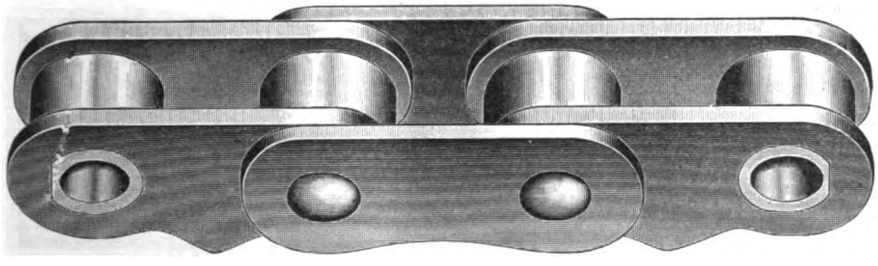


SEVERE TESTS HAVE DEMONSTRATED THEIR ADVANTAGES.

Many of the most prominent manufacturers have adopted them.

IT WILL PAY YOU TO INVESTIGATE.

VICTORY DUE TO QUALITY AND FINE PROPORTIONS.



"WHITNEY" ROLLER CHAIN STANDARDS

will be THE Standards for American Automobiles for the season of 1903.

THE WHITNEY MFG. CO., Hartford, Conn.



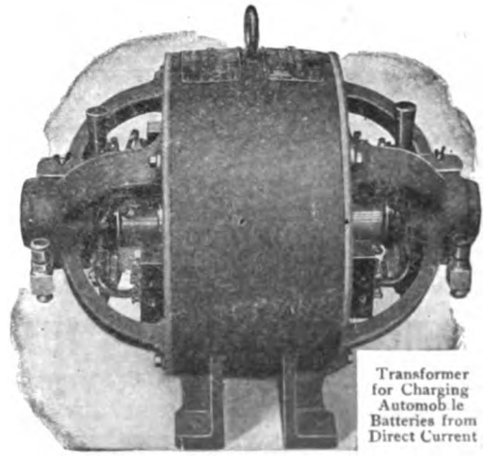
Convertor for Charging Automobile Batteries from Alternating Current.

WE ARE MANUFACTURERS OF THE

Standard Electric Motors

THAT ARE NOW USED ON ALL THE MOST SUCCESSFUL ELECTRIC AUTOMOBILES in the country.

Our machine is the **MOST EFFICIENT and PRACTICAL OF THEM ALL**—as demonstrated by hundreds of them in daily use all over the country.



Transformer for Charging Automobile Batteries from Direct Current

THE ELWELL-PARKER ELECTRIC CO.,

CLEVELAND, OHIO.

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STOCK FORGINGS
. . . FOR . . .
Automobiles.

FRONT AXLE CENTERS, REAR AXLES, PERCH HUBS, STEERING KNUCKLES and FRONT AXLE ENDS and MACHINED STEERING EQUIPMENT.

(Patented December 16, 1890.)



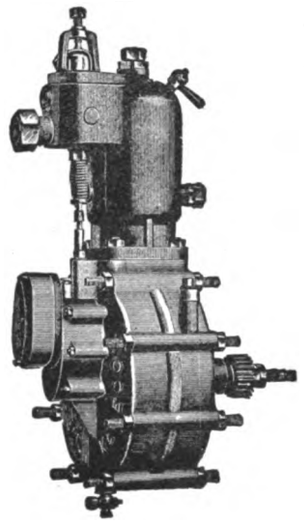
These Forgings are for Heavy and Light Vehicles.

DROP FORGINGS FOR ALL PURPOSES.

See New Circular A, which we mail on request.

THE BILLINGS & SPENCER COMPANY
HARTFORD, CONN., U. S. A.
No. 8 Long Lane, Aldersgate Street, LONDON, E. C.

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Imported Motors



place at your command a means by which you can maintain the highest standard of Vehicle Equipment.

Made in 5 and 7 h. p. single cylinder and 9 and 11 h. p. double cylinder, they give all the variety needed and all are the best that can be produced.

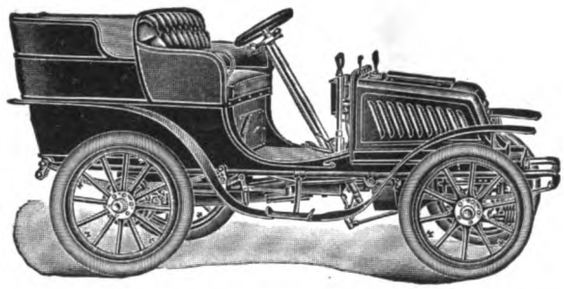
In headlights we manufacture special Acetylene Lamps.

Catalogue 3 will make you feel at home on both these subjects.

A. H. FUNKE,
Sole Importer,
98 Duane Street, NEW YORK.

DARRACQ CARS

Hold more records than any other make in the world.



IN AMERICA,

Weekly Importations insure Latest Styles
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IMMEDIATE DELIVERY.

AMERICAN DARRACQ AUTOMOBILE CO.,
F. A. LA ROCHE, Sales Manager,
652 Hudson Street, (near 14th St. Station, 9th Ave. El.) NEW YORK.



We Have Been Making Bells Since 1832.

We think this pretty strong assurance that we know how to make them well and sell them rightly In the matter of automobile bells we believe the

BEVIN BELL

to be distinctly better than anything else of the sort on the market. It will afford us pleasure to forward you details and price on request.

Our goods will be represented by Chas. E. Miller, spaces 46, 47, 48, 49, 50, 51 at the Automobile Show, Madison Sq. Garden, New York, Jan. 17 next

BEVIN BROS. MFG. CO.,
East Hampton, Conn

NEW MODEL 6

ELMORE

$1500 Auto for $800.

DOUBLE CYLINDER MOTOR. PERFECT ACTION
EASY TO CONTROL AT ANY SPEED.
THREE POSITIVE SPEEDS FORWARD AND REVERSE.
A Blue Ribbon, 100 Per Cent., Proposition to Agents.
ELMORE MANUFACTURING CO., Clyde, O., U. S. A.

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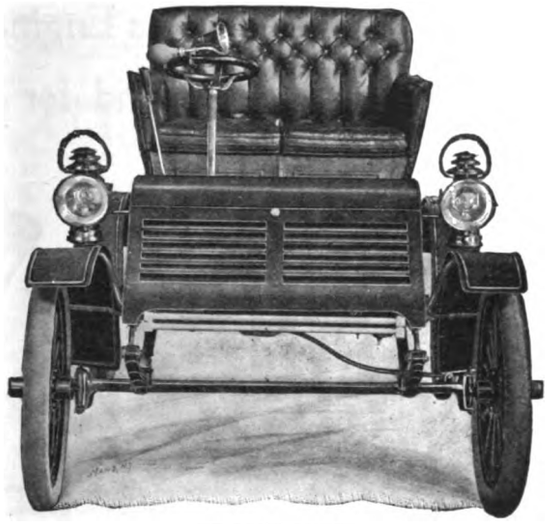
Announcement

THE AMERICAN MOTOR CARRIAGE CO.

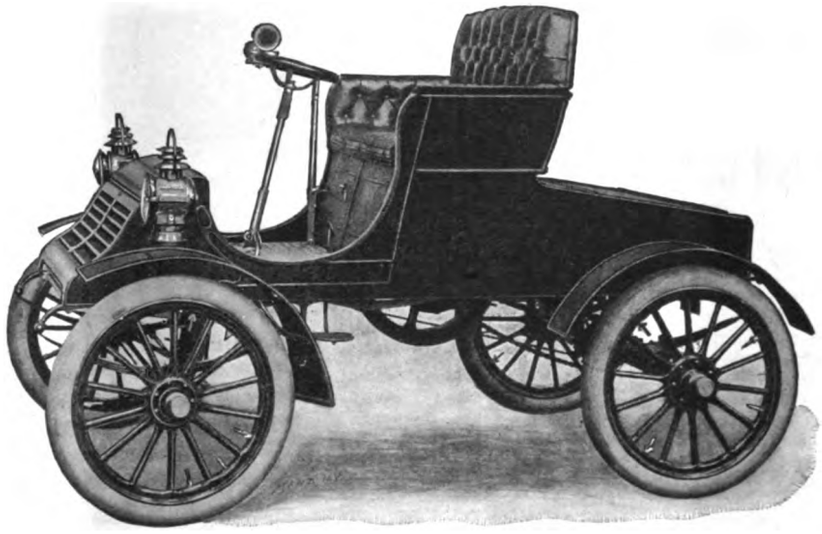
OF CLEVELAND, OHIO
(THE HOME OF GOOD GASOLENE MACHINES)

Wishes to announce that they are now ready to show to the discriminating American buyer their perfected

AMERICAN GASOLENE RUNABOUT



FRONT VIEW



SIDE VIEW

5 H. P. 1200 lbs. $1000. Wheel base, 5 ft. 10 inches. Goodrich or G & J clinchers. Best equipment throughout.

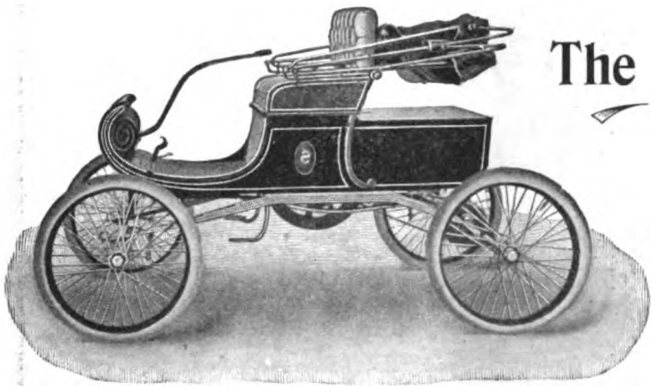
We are credited with building a BETTER MADE and BETTER FINISHED machine than any other concern. But you had better look the machine over and satisfy yourself in this respect. Desirable dealers in good automobile centers wanted. Write for agency proposition. Illustrated catalogue on request.

The American Motor Carriage Co., 514-520 E. Prospect St., Cleveland, Ohio.

PARDEE & CO., Chicago, Western Representatives.

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NOTHING TO WATCH BUT THE ROAD.



The Oldsmobile

embodies reliability in every detail. It is the result of 17 years experience in the construction of Gas Engines and Automobiles. The pioneer and perfected automobile for business and for pleasure. The motor of simplest construction (four horse power) and unusual strength. Any boy can understand it. Starts at will from the seat and always under instant control.



$650.00 at Factory.

The lowest price reliable automobile on the market.

Write for illustrated book to Department.

SELLING AGENTS:

Oldsmobile Co., 138 W. 38th St., New York.
" " 1124 Connecticut Ave., Washington, D. C.
Quaker City Automobile Co., 138 No. Broad St., Phila.
H. B. Shattuck & Son, 239 Columbus Ave., Boston.
Banker Bros. Co., East End, Pittsburg, Pa.
Oldsmobile Co., 411 Euclid Ave., Cleveland, O.
Wm. E. Metzger, 265 Jefferson Ave., Detroit, Mich.
Ralph Temple & Austrian Co., 293 Wabash Ave. Chicago, Ill.
Fisher Automobile Co., Indianapolis, Ind.
Olds Gasoline Engine Works, Omaha, Neb.
W. C. Jaynes Automobile Co., 873 Main St., Buffalo, N.Y.
F. L. C. Martin Co., Plainfield, N. J.
Autovehicle Co., 79 Orange St., Newark, N. J.
F. W. Stockbridge, Paterson, N. J.
Day Automobile Co., St. Louis and Kansas City, Mo.
George Hannan, 1455 California St., Denver, Col.
Clark & Hawkins, 903 Texas Ave., Houston, Texas.
Hyslop Brothers, Toronto, Ont.
Manufacturers Co., 26 Fremont St., San Francisco, Cal.
A. F. Chase & Co., 215 Third St., Minneapolis, Minn.
Oldsmobile Co., 728 National Ave., Milwaukee, Wis.
Rochester Auto Co., 170 South Ave., Rochester, N. Y.
Jas. B. Seager, Tuscan, Ariz.
F. E. Gilbert, Jacksonville, Fla.
Texas Imp. & Machinery Co., Dallas, Texas.
Abbott Cycle Co., 411 Baronne St., New Orleans, La.
C. H. Johnson, 55 S. Forsyth, St., Atlanta, Ga.
Sutcliffe & Co., 411 Main St., Louisville, Ky.
Brown-Thompson & Co., Hartford, Conn.
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THE OLDS MOTOR WORKS,

DETROIT, MICH., U. S. A.

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VICTORIOUS AT HOME AND ABROAD.

The White Steam Carriage

WINS OUT IN ENGLAND'S RELIABILITY CONTEST.

True to its former showing made in this country, a WHITE STEAM CARRIAGE completed the 650 miles test with

AN ABSOLUTELY CLEAN RECORD,

being one of two out of seventy entries to achieve this distinction.



The conditions of this run were unusually severe, the competing vehicles being required to make five separate journeys over different routes, and submit to brake contests and hill climbing trials.

The WHITE STEAM CARRIAGE used was a six horse power vehicle taken from stock and not only scored

1800 POINTS OUT OF A POSSIBLE 1800,

but demonstrated its fuel economy by using only 13 quarts per day.

Both its track records for speed and its road records for reliability prove that

THE WHITE IS A THOROUGHBRED.

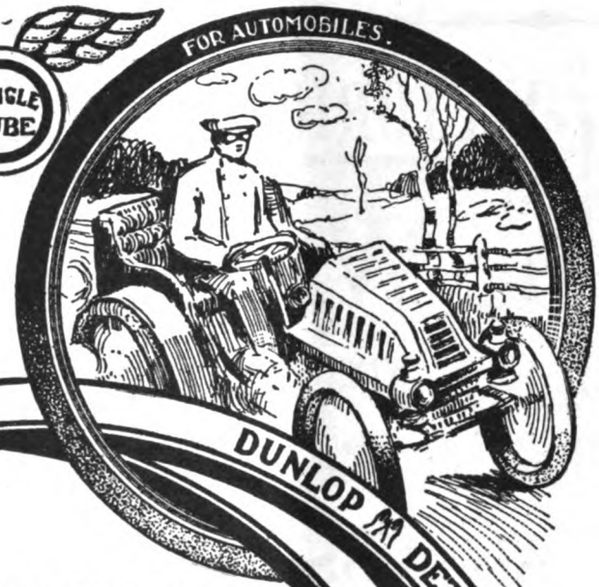
WRITE FOR FULL PARTICULARS, INCLUDING PROF. THURSTON'S REPORT ON OUR STEAM GENERATOR, AND THE OFFICIAL REPORTS OF IMPORTANT ENDURANCE CONTESTS.

WHITE SEWING MACHINE CO., (Automobile Department) Cleveland, Ohio.

22 Union Square, New York, N. Y.
609 Main Street, Buffalo, N. Y.
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12 Woodward Avenue, Detroit, Mich.
300 Post Street, San Francisco, Cal.
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HARTFORD
and
DUNLOP TIRES

Have Stood Pre-eminently Foremost Since the Introduction of Pneumatic Tires

Few devices have been the subject of a greater inventive faculty or more persistent and successful exploitation, and few have reached such a high state of development.

They Never Vary in Quality or Workmanship Because They Cannot Be Made Better or of Better Materials

If the BEST is none too good for you, it will pay you to adopt these widely and most favorably known tires. Every user is bound to be satisfied with them.

True Economy Represents Buying the Best Wherever You Can Find It

THE HARTFORD RUBBER WORKS COMPANY

Hartford, Conn.
U. S. A.





THESE ARE THE ONLY TOOLS YOU WILL NEED

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, October 16, 1902. No. 3

PACKARD WILL MOVE

Detroit Men and Money Secure Control, Form a new Company and seek new Site.

Warren, O., is shortly to lose both the famous Packard car and the Messrs. Packard, whose name it bears.

All rights and property of the Ohio Automobile Works, under which name the Messrs. Packard and their associates operate, have been acquired by a new company, made up mainly of Detroit (Mich.) capital. The new company will start with a paid in capital of $500,000. The works will be continued at Warren, O., until a site can be obtained in Detroit, when the plant will be removed to that city and operations continued on an increased scale. It is the intention of the new company to increase the output tenfold.

The Detroit men in the company are Russell A. Alger, jr., Fred M. Alger, John T. and Truman Newberry, H. E. and R. P. Joy, Charles A. Ducharme, D. M. Ferry, jr., Willard C. and Philip H. McMillan and Joseph Boyer, many of them names that stand high in Michigan and are well known outside the State. The new board of directors will consist of Truman Newberry, Harry E. Joy, George L. Weiss, Philip H. McMillan, Joseph Boyer, R. A. Alger, jr. The Messrs. Packard will continue in charge of the enterprise.

In confirming these details Harry E. Joy, who carried a Packard car through the reliability run to Boston, stated that it is the intention of the new company to elect officers as soon as he returned to Detroit.

Grant in Trouble.

On the application of Mrs. John McKeown, of Washington, Pa., the Franklin Trust Co. has been appointed receiver for the Grant Tool Co., of Franklin, that State. Mrs. McKeown's claim amounts to $160,000; other liabilities aggregate $70,000. The assets are placed at $550,000. The Grant Tool Co. was formerly the Grant Ball Co. of Cleveland, Ohio.

Change in Remington Management.

James S. Holmes, Jr., has resigned his position as general manager of the Remington Automobile and Motor Co. of Utica, N. Y., to take effect Nov. 1st. Mr. Holmes has accepted a responsible position with a New York concern entirely outside of the automobile trade. Frank P. Hilton has also resigned as treasurer of the same company. Malcolm Graham, who has been associated with Mr. Holmes as vice-president of the company, will assume the management, and E. J. Otis will become treasurer and general superintendent.

Whitney Files two More Suits.

Two more suits have been brought by the Whitney Motor Wagon Co. of Boston for alleged infringement of patents on steam vehicles. The concerns proceeded against are the Prescott Automobile Co., Passaic, N. J., and Grout Bros., Orange, Mass. The suits are similar in character to those brought within the past year against several other makers of steam carriages, and involve a large number of claims. One of the most important of these is the adjustable chain strut, which is in such general use.

More American Cars for Foreigners.

The Houk Automobile Co., of London, England, has secured the exclusive English agency for the International Motor Car Co.'s line of Toledo gasolene and Waverley electric vehicles. George W. Houk, the head of the company, closed the deal while in this country.

Show for Philadelphia.

Philadelphia will have a local show. It already has been set for the first week of February and the Second Regiment Armory engaged. Messrs. Le Cato and Schlichter, who conducted the previous show in that city, are promoting the affair.

Benjamin's new Berth.

C. A. Benjamin, for a number of years with the Locomobile Co. of America, has been appointed general sales agent of the H. H. Franklin Mfg. Co. of Syracuse, N. Y.

TO ST. LOUIS IN 1904

Chairman Scarritt Advances a Novel Idea Which Meets With a Favorable Reception.

It is not wholly improbable that the year of the St. Louis Exposition, 1904, will witness the reliability run of that period headed not east, nor north, but west—headed, in fact, for the Exposition itself.

The idea was launched by that man of ready wit and resource, Winthrop E. Scarritt, in his speech at the smoker tendered the "reliability runners" at Springfield on Monday night. At the time the suggestion was well received; after discussion served only to strengthen its first reception, making it appear that the 1,000-mile test which it implies would not lack the entries and interest necessary to its success.

"My idea," said Mr. Scarritt, pointing in the direction of St. Louis, "is to say in substance to the contestants, 'There's St. Louis. Get there.'"

He then amplified the suggestion in this wise:

"I would reuire the operator to choose his own route, feed himself and his observer and cover the course in not less than ten days nor more than fourteen. He must secure his own gasolene and make his own repairs. The observer's record will tell the details of the trip."

Receivers Obtain Money.

The United States Court has granted permission to the receivers of the American Bicycle Co. to issue receivers' certificates to the value of $500,000. They will be cashed in this city and the proceeds applied to the accounts of the International Motor Car Co. and the Federal Mfg. Co., two of the Bicycle Co.'s subsidiaries.

Gets Nineteen Counties.

The Miller-Mundy Motor Carriage Co., Utica, N. Y., have secured the agency of the Autocar Co., of Ardmore, Pa., for 1903, for territory embracing nineteen counties in New York State.

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ALMOST A RIOT OF RELIABILITY.

The A. C. A. Contest Develops so Many Equally Superb Performances that the Chief Award is a Matter of Monumental Speculation—Unofficial Figures Show 20 Cars are Tied for It—Of 75 Starters, but 7 Fail to Survive—The Story in Detail.

While there is, and can be, no assurance of its correctness, the most reliable information obtainable makes it appear that the following vehicles earned perfect scores and are tied for the chief award, the President's Cup :

Nos, 1 and 3, Packards. No. 5. Prescott. No. 7, Lane. No. 11, Haynes-Apperson.
Nos. 24, 25, 26 and 28, Whites. No. 31, Stevens-Duryea.
Nos. 33 and 61, Grouts, Nos. 42, 67 and 76, Fournier-Searchmonts.
Nos. 47 and 48, Knoxes. No. 64, Oldsmobile. No. 68, Fredonia.
No. 70, Foster. 20 in all.

There have been other runs, here, there and abroad, but none quite like the six days' reliability run, or contest, or whatever you care to call it, which came to a close at Fifth avenue and Fifty-eighth street, New York, on Wednesday evening last at about the time Old Sol began to pull down his shades for the night.

Designed by the Automobile Club of America as a public demonstration of the reliability of American motor vehicles, the demonstration proved of a nature that should serve to carry their fame around the world. Mindful that the year had witnessed great strides toward perfection, the promoters had imposed rules and restrictions that made their previous attempt—last year's run to Buffalo—appear a mere helter-skelter. The vehicles proved themselves equal to the rules. Of the 75 that left New York on the morning of the 9th, 68—or better than 90 per cent—completed the 488 miles that made up the route to Boston and back. It is a record of which American makers may well be proud.

Of the 68 there were those that had had their troubles—troubles that had involved stoppages, and stoppages that had incurred the infliction of the dreaded loss of points. But the 68 demonstrated their ability to "get there," and there is great glory in that. There was never an automobile contest anywhere that developed such a large proportion of vehicles of the sort. Of the number of those that came through with "clean scores" no man or publication can speak with authority or with any show of it. The number guessed at ranges from 22 to 17, but until the observers' books are tabulated they will remain guesses and nothing more. The tabulation may or may not be completed by Saturday next. This is the word that comes direct from headquarters.

And when the tabulation is completed and made public, put up your umbrella! Unless all signs fail, it will be followed by a storm. There were many constructions of what constituted a penalized stop, and there were interested free lances with sharp eyes and pencils as sharp who were not taking notes for personal amusement. More than one observer is not unlikely to be called on to defend himself. The rule which states that "one mark will be deducted for each minute the vehicle is at rest" is the rock on which several with less than sixty second stoppages have threatened to make a stand to secure the much desired perfect score. Whether on a hill a car should falter and roll backward, and then get going forward, without coming to what most people would term a rest—an occurrence that happened several times—should be debited with one stop, two stops or no stop at all was another fine point that was seriously discussed. It is such things as these that may make necessary the warning to keep umbrellas handy.



Chairman Scarritt Surveys the Situation.

The start of the contest was not unlike the start of all automobile contests. There was the same collection of big cars and little cars, of red, white, blue, black and yellow cars; the same noises, the same smells, the same crowd of bustling officials—sans ribbons on the arms this time—the same corps of police, the same click, click of cameras, the same surging, babbling intermixture of observers, operators and spectators, and apparently more of them than ever before, all with the same background, the palatial Vanderbilt mansion. Few of the old familiar faces were missing. President Shattuck strode dignifiedly here and there, Chairman Scarritt was not only here and there but everywhere, and Secretary Butler, besieged on all sides, tried hard to make progress in the face of the volleys of questions fired at him. Of course, Ben Smith was there, and Frank Weston, and Charles E. Miller,. and Kenneth Skinner, and W. D. Gash. Wherever and whenever automobiles gather there they are ever to be found; Gash this time had in tow Robert C. Ogden and J. S. Bunting, powers in the great Wanamaker institution. There were other new faces, too. Thomas B. Jeffery, who has not aged one year in twenty, was on the scene for the first time, deeply interested, of course, in his Rambler cars. Theodore Weigle, from the Akron factory of the Diamond Rubber Co., chubby and chipper, was there; James B. Becker came on from Clyde, O., to keep his eye on his Elmore, and there were others.

Ten minutes after the last car had left, however, what had been a scene of unusual hubbub assumed the wanted appearance of a New York street.

The story of the ensuing six days—they followed the Biblical injunction and rested in Boston on Sunday—is a long one. The details of the doings of each day are chronicled in other columns. In striking contrast to last year's run the weather gods were good. They wept on but one day—Sunday, when there was nothing doing, and no harm and little inconvenience resulted. Last year the contestants wallowed in mud for four days; this time it was dust, not mud, that worried them.

"In fact," said Windsor T. White just after he finished, "I'm the least bit sorry that we did not have one day of hard rain; it would have made the test more severe, and that would have just suited us."

It is violating no confidence to say that

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the severest strain to which most of the men and their machines were subjected was the strain of keeping within the 14 mile an hour limit. There were those that gloried in being in front and in getting there and remaining there, they ate up time and distance so quickly that to avoid reaching controls ahead of the schedule what might be termed "trick riding" was necessary. They would slow down to a snail's crawl, and at that pace cut letter S's and zigzag from side to side of the road or street. One of the contestants once avoided a stop, and also possible disqualification, by thus skilfully creeping a mile in some 40 minutes—no small feat in itself. On repeated occasions it was not an infrequent sight to see 50 or 60 slowly moving vehicles strung out as regularly ordered as if on parade.

There were more tire troubles than the roads warranted, but, generally speaking, the other troubles were minor ones. Except-ing the "also rans," a broken piston on No. 71, De Dion; broken bolts on the transmission of No. 29, gasolene Locomobile, and a badly buckled wheel on No. 19, Automotor, were the most serious occurrences to any of the cars that completed the run. In a way the most unfortunate of the survivors was F. A. La Roche. On the first day his troubles with his Darracq began, and they continued until Boston was reached. There he dis-

(Continued on page 71)

50 GASOLENE——THE SURVIVORS——18 STEAM.

No. Official.	Manufacturer.	Entrant.	Operator.	Number of passengers vehicle can carry.	Type of motor—gasolene, steam or electric.	Weight, including supplies and equipment.	Engine.	
							Rated H. P.	No. of Cyl.
1	Ohio Automobile Co.	Harlan W. Whipple...	H. W. Whipple	7	Gaso.	2,600	24	2
2	Ohio Automobile Co.	Henry B. Joy	Henry B. Joy	4	Gaso.	2,100	12	1
3	Ohio Automobile Co.	Adams & McMurtry Co.	George L. Weiss	4	Gaso.	2,100	12	1
4	Ohio Automobile Co.	Adams & McMurtry Co.	J. F. Loughlin	4	Gaso.	2,100	12	1
5	Prescott Auto Manufacturing Co	Prescott Auto Mfg. Co..	H. M. Wells	2	Steam	1,350	4½	2
7	Lane Motor Vehicle Co.	Lane Motor Veh. Co....	James Hussar	2	Steam	1,800	9	2
8	Lane Motor Vehicle Co.	Lane Motor Veh. Co....	O. K. Raymond	2	Steam	1,650	9	2
10	Haynes-Apperson Co.	Haynes-Apperson Co...	Elwood Haynes	4	Gaso.	1,975	9	2
11	Haynes-Apperson Co.	Haynes-Apperson Co...	Frank Mutt	2	Gaso.	1,900	9	2
12	Haynes-Apperson Co.	Haynes-Apperson Co...	H. Michener	2	Gaso.	1,800	6	2
13	Autocar Co.	Autocar Co.	W. E. Evans	2	Gaso.	1,350	10	2
16	Ward-Leonard Electric Co.	Ward-Leonard Elec. Co.	P. G. Fleming	4	Gaso.	1,800	15	2
17	Apperson Bros.	Apperson Bros.	Elmer Apperson	4	Gaso.	2,500	16	2
18	H. Bartol Brazier	H. Bartol Brazier	H. Bartol Brazier	4	Gaso.	2,760	15	2
19	Torbensen Gear, Inc.	Torbensen Gear, Inc....	Frank D. Pearce	2	Gaso.	875	5	1
20	George N. Pierce Co.	George N. Pierce Co....	Percy P. Pierce	2	Gaso.	800	4½	1
21	A. Darracq & Cie.	Harold H. Brown	Harold H. Brown	4	Gaso.	1,600	12	2
23	Apperson Bros.	H. K. Browning	Edgar Apperson	6	Gaso.	2,600	16	2
24	White Sewing Machine Co.	Paul H. Deming	Paul H. Deming	2	Steam	1,450	6	2
25	White Sewing Machine Co.	Windsor T. White	Windsor T. White	2	Steam	1,450	6	2
26	White Sewing Machine Co.	White Sew. Mach. Co..	George S. Waite	2	Steam	1,450	6	2
27	†White Sewing Machine Co.	White Sew. Mach. Co..	A. J. Schaife	2	Steam	1,600	6	2
28	†White Sewing Machine Co.	White Sew. Mach. Co..	M. R. Hughes, Jr.	2	Steam	1,600	6	2
29	Locomobile Co. of America	A. L. Riker	A. L. Riker	4	Gaso.	2,200	12	4
30	J. Stevens Arms & Tool Co.	J. Stevens A. & T. Co..	J. W. Duryea	2	Gaso.	1,650	6	2
31	J. Stevens Arms & Tool Co.	J. Stevens A. & T. Co..	P. Nestman	2	Gaso.	1,050	6	2
32	Thos. B. Jeffery Co.	Thos. B. Jeffery Co.	Arthur Gardner	2	Gaso.	1,200	6	1
33	Grout Bros.	Grout Bros.	C. B. Grout	2	Steam	1,300	6½	2
34	Locomobile Co. of America	S. T. Davis, Jr.	S. T. Davis, Jr.	2	Steam	2,400	10	2
35	Locomobile Co. of America	Locomobile Co. of Am..	S. F. Davis, Jr.	2	Steam	985	4	2
36	Locomobile Co. of America	Locomobile Co. of Am..	Murray Page	2	Steam	985	4	2
37	Elmore Manufacturing Co.	Elmore Mfg. Co.	H. L. Newton	2	Gaso.	1,060	5	2
38	Elmore Manufacturing Co.	Elmore Mfg. Co.	J. F. Newcomer	2	Gaso.	1,060	5	2
39	De Dion-Bouton Co.	Kenneth A. Skinner....	Kenneth A. Skinner	4	Gaso.	1,200	8	1
40	Autocar Co.	H. B. Shattuck & Son..	R. D. Willard	4	Gaso.	1,350	10	2
41	Olds Motor Works	H. B. Shattuck & Son..	F. F. Cameron	2	Gaso.	800	4	1
42	Fournier-Searchmont Co.	H. B. Shattuck & Son.	L. T. Sackett	4	Gaso.	2,200	8	2
43	Ohio Automobile Co.	H. B. Shattuck & Son.	Benjamin Smith	4	Gaso.	2,000	12	1
44	A. Darracq & Cie.	F. A. La Roche	F. A. La Roche	3	Gaso.	1,700	16	2
45	H. H. Franklin Co.	S. G. Averill	S. G. Averill	2	Gaso.	1,125	8	4
46	Knox Automobile Co.	Knox Automobile Co...	F. H. Fowler	2	Gaso.	1,400	8	1
47	Knox Automobile Co.	Knox Automobile Co...	H. A. Knox	2	Gaso.	1,400	8	1
48	Knox Automobile Co.	Knox Automobile Co...	C. S. Mason	2	Gaso.	1,400	8	1
49	Fiat-Torino, Italy	C. H. Tangeman	C. H. Tangeman	5	Gaso.	1,950	12	4
51	Stearns Steam Carriage Co.	Stearns Steam Car Co.	W. A. Sweet	2	Steam	1,500	8	2
52	Winton Motor Carriage Co.	Percy Owen	Percy Owen	4	Gaso.	2,150	15	2
55	U. S. Long Distance Auto Co.	U. S. Long Dis. A. Co.	E. A. Riotta	2	Gaso.	1,600	7	1
56	U. S. Long Distance Auto Co.	U. S. Long Dis. A. Co.	E. H. Barker	2	Gaso.	1,600	7	1
57	George N. Pierce Co.	George N. Pierce Co...	Charles Steffy	2	Gaso.	800	6	1
58	Thos. B. Jeffery Co.	Henry C. Squires & Son	Gaston Plantiff	2	Gaso.	900	4	1
59	Winton Motor Carriage Co.	C. E. Proctor	C. E. Proctor	4	Gaso.	2,300	16	2
60	Grout Bros.	Grout Bros.	W. J. Gould	2	Steam	1,300	6½	2
61	Grout Bros.	Grout Bros.	Carl A. Grout	2	Steam	1,300	6½	2
62	International Motor Car Co.	International M. C. Co.	M. H. Winters	4	Gaso.	2,600	16	3
63	Olds Motor Works	Oldsmobile Co.	Carl H. Page	2	Gaso.	800	4	1
64	Olds Motor Works	Oldsmobile Co.	R. M. Owen	2	Gaso.	800	4	1
65	Automotor Co.	Automotor Co.	A. Smith	4	Gaso.	1,669	12	2
66	Panhard-Levassor	Leonard D. Fisk	Leonard D. Fiske	4	Gaso.	2,600	12	4
67	Fournier-Searchment	John Wanamaker	J. S. Bunting	4	Gaso.	2,100	8	2
68	Fredonia Manufacturing Co.	Fredonia Mfg. Co.	C. T. Gaither	2	Gaso.	1,300	9	1
70	Foster Auto Manufacturing Co.	Foster Auto Mfg. Co...	Fred J. Holly	2	Steam	1,300	4	2
71	De Dion-Bouton Co.	Kenneth A. Skinner....	T. S. Ulrich	3	Gaso.	900	6	1
73	Foster Auto Manufacturing Co.	Dr. M. A. Carman	Dr. M. A. Carman	4	Steam	1,350	4	2
75	Thos. B. Jeffery Co.	Mechaley Bros.	C. L. Brown	2	Gaso.	1,100	4½	1
76	Fournier-Searchment	John Wanamaker	R. A. Greene	4	Gaso.	2,100	8	2
77	Thos. B. Jeffery Co.	Columbus Auto. Exch'ge	C. H. Wilson	2	Gaso.	1,100	4½	1
79	Olds Motor Works	H. B. Shattuck & Son..	W. A. Frederick	2	Gaso.	800	4	1
80	Foster Auto. Mfg. Co.	Foster Auto. Mfg. Co..	Park Dinsmore	2	Steam	1,200	4	2

"THE DEATHS."

6	Foster Auto Manufacturing Co..	Foster Auto Mfg. Co...	Broke crank shaft	2	Steam	1,300	4	2
14	Autocar Co.	Autocar Co.	Leaky water tank	4	Gaso.	1,450	10	2
15	Ward-Leonard Electric Co.	Ward-Leonard Elec. Co.	Broke engine shaft	4	Gaso.	1,550	10	1
20	Neftel Automobile Co.	Knight Neftel	Generator failed	4	Elec.	3,500	—	—
54	De Dion-Bouton Motorette Co...	Dr. Julius F. Hovestadt.	Broke steering knuckles..	3	Gaso.	950	6	1
69	Fredonia Manufacturing Co.	Fredonia Mfg. Co.	Engine troubles	2	Gaso.	1,300	9	1
74	E. R Thomas Motor Co.	Mechaley Bros.	Engine troubles	2	Gaso.	995	6	1

ENTRANTS THAT FAILED TO START.

9	Pope-Robinson Co.	Pope-Robinson Co.		4	Gaso.	3,000	24	4
22	Foster Auto Manufacturing Co..	Foster Auto Mfg. Co...		2	Gaso.	850	8	2
53	Electric Vehicle Co.	Electric Vehicle Co.		4	Gaso.	2,500	10	2
72	†Georges Richard	Manhattan Transit Co.		4	Gaso.	1,400	10	2
78	A. Darracq	W. P. Harnow		3	Gaso.	1,700	16	2

• • Carries 8½ h. p. gasolene motor and dynamo to recharge battery en route. †Delivery Wagon.

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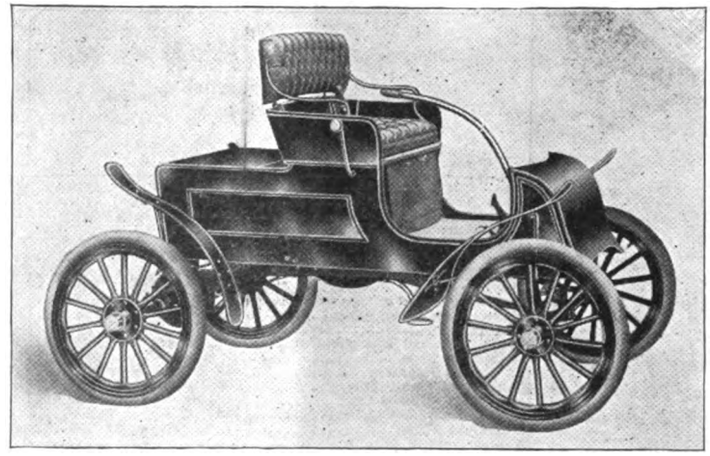
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NEW YORK, OCTOBER 16, 1902.

What was Accomplishe .

Out of the chaos existing at present regarding the specific results of the reliability contest, which came to an end yesterday, little beyond generalizations can be indulged in at present.

It is known that some 20 cars are claimed to have a clean bill of health, having come through the six days' run without a single penalized stop. For this we have the word of the observers, reinforced by the contestants. But whether all these claims will be borne out by the unimpeached testimony of the books is quite another matter. At best there are many mooted points, raised in entire good faith, which must be settled before any award is made. In the process of revision the list is likely to be shortened somewhat.

If we turn to the certificate winners we are still more completely at sea. It is no exaggeration to say that, compared to it, the marking contest is simplicity itself. It is probable that a considerable majority of the finishing cars will be awarded first class certificates, and that most of the remainder will get second and third class ones. But beyond this it is utterly impossible to go.

We have a list of the arrivals and departures from each of the twelve controls, which, of course, gives us the time consumed by each car in covering the distance between them. But we do not know, and cannot for some time, the causes of the delays, where such occurred. They have been due to tire troubles or to other non-penalized stops, rather than to slow running. In such case they would not interfere with the award of certificates.

But if information of this precise character is unobtainable, it is not so with that bearing on the run itself.

THE WEEK'S CASUALTIES.

TOTAL: KILLED, 172; INJURED, 277.

RAILROADS:	Killed, 141.	Injured, 129.
TROLLEYS:	Killed, 19.	Injured, 79
HORSES:	Killed, 11.	Injured, 57.
BICYCLES:	Killed, 1.	Injured, 10.
AUTOMOBILES:	Killed, 0.	Injured, 2.

TOTAL, THREE WEEKS: KILLED, 252; INJURED, 470.

It was a magnificent, an overwhelming success.

Nothing like it has ever been witnessed in this or any other country. It completely dwarfs every event of the kind ever conceived and carried through.

Of the 75 cars which left New York on Thursday last 68 reached the starting point last night.

The simple statement is worth volumes. It is true that some of the 68 cars had met with accidents en route, and that others finished with difficulty. It must be said, too, that in the matters of roads and weather the contestants were greatly favored. A run of this distance could not be held under more favorable conditions. Everything conduced to the making of an almost unexampled record.

But this is very far from being all. No extraneous circumstances would have availed to bring about such a result had there not been a basis to work upon in the shape of well designed and soundly constructed cars, operated with intelligence and skill.

There were bad roads in plenty, although few of the indescribably vile ones which marked the run to Buffalo last year.

Over them the cars were run for mile after mile at a pace that was usually quite up to the 14 mile limit. Uphill and down dale, following deep ruts, plunging into holes, ploughing through mud, sand or loose dirt, they rarely faltered and never failed.

That more than 90 per cent of the starters should finish is, therefore, a remarkable showing. Not a whit behind it is the small number of accidents that occurred.

The broken axles, steering knuckles, springs and other parts, so great a figure in last year's run, was almost unknown. There was no rebuilding of cars over night, no procession of factory hands en route, by railroad trains and on cars, no carrying of huge repair kits, no shipment of trunks of parts from point to point. Blacksmiths were not compelled to work all night or routed out of bed and set to work forging straps and rods with which to bolster up falling cars.

Instead there was order and quiet at the controls as well as en route.

The operators were, as a rule, their own mecanicians. In the case of the big cars a mecanician was usually carried along, and he attended to the work of lubricating, replenishing tanks, cleaning up and adjusting. But with most of the smaller cars it was just the other way. The time allotted for repairs—an hour and a half at noon and two hours in the morning—was nearly always more than was needed. The cars were lined up ready for the start anywhere from half an hour to an hour and a half before the word was given.

A marked difference between the present run and that of last year was also seen in the objects sought.

Last year every effort was bent in the direction of getting through. No expenditure of time, effort or money was deemed too great if this purpose was achieved. No check was kept on the number, duration or character of the stops or of the repairs. Those in charge of the cars had an absolutely free hand in all these particulars.

Clean records were what were sought on the Boston run. Getting in, and even getting in on time, was a secondary consideration with most drivers. They knew how easy a task that was. But to come through

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without a penalized stop, or with as few of them as possible, was the desire of their hearts, and to its accomplishment they bent every effort.

There were few cars brought into the controls solely by the almost superhuman efforts of their occupants.

The latter, except the drivers, took things easy, and acted precisely as they would have done had they been out for a little jaunt of a few miles. Many of the observers had sinecures. There was little for them to do, and most of them did it well.

The run demonstrated incontrovertibly that single day's runs of 75 to 100 miles a day are too short to make a real test of the cars of to-day.

They must be sent further, if anything not already known is to be made public. We now know that almost any reputable car can start off for a day's or a week's journey and arrive at its destination with certainty, and almost without trouble.

Higher flights may now be attempted, and it has already been more than intimated that they are contemplated.

The object of the run has been accomplished. The reliability of the contesting cars was made plain beyond misunderstanding. They are reliable, and can be relied upon to carry their passengers to destination without stops or troubleof any kind.

The Clouds Begin to Break.

This is the broad, luminous, inspiring beam which comes from the New York Evening Sun:

"The time is not far distant when the alleged comic papers will have to give up printing the tiresomely familiar picture of the automobilist scattering death and destruction in his wake. Even the embattled farmers will have to reconcile themselves to the resources of civilization."

It appears beneath the caption, "The Automobile Question Settling Itself," which in itself conveys a great truth, for, as the Sun says:

"The demand for legislation on the subject of the speed limit of automobiles, with severe penalties for those who exceed it, has died down. There have been much fewer accidents recently, and as the number of horseless carriages is increasing every day it is clear that either chauffeurs are becoming more careful or the horses are getting accustomed even to the red, white and blue devils, as their ancestors ceased to shy at railroad trains and electric streetcars."

It cannot be otherwise. The automobile is merely the "juggernaut" of to-day. Yesterday it was the bicycle. To-morrow it may be the flying machine, the suggestive dangers of which are so enormous and so picturesque that the automobile will be quickly lost to view once the sensationalist turns his pen to them. He will then have the same public which now shudders at the shadow of an automobile fairly quaking at the possible consequences of the sudden flop of an airship.

It serves to show the folly of what the Sun in its wholesome editorial tritely terms "the absurdity of vindictive special legislation," in which, unfortunately, too many automobilists are prone to share in some measure.

"While little minds discuss, great questions solve themselves," is an aphorism that aptly fits the present situation. The automobile question is a question of the sort.

Philadelphia Folly.

We confess that we fail utterly to appreciate the reasoning of some of the men and organizations whose avowed purpose is to serve the cause of automobilism. Here in New York we find some of them favoring the examination and licensing of automobilists without distinction, and in Philadelphia last week others of the same class gave evidence of the same tendency toward favoring special legislation and unnecessary and unduly rigorous impositions.

The Philadelphians constituted a committee from the Automobile Club of that city to a joint conference designed to draft an ordinance satisfactory to all vehicular interests. When all was said and done, the automobilists had agreed that while fines of $5, $10 and $25 were sufficient penalties in the order of the offence for violations on the part of other vehicles, it is right and proper that automobilists be mulcted $25 for the first offence and be denied the right to use the highways for a second transgression.

Not to make light of justice by mentioning it in connection with the matter, what earthly rhyme or reason there can be in such an agreement, even in Philadelphia, is absolutely incomprehensible. It is simply pandering to popular prejudice and lending color to newspaper headlines, of which the automobile is a victim, and adding strength to the carefully nursed and too popular supposition that it is a demon on wheels.

To us it seems that all these special exactions and discriminations will some day return to vex and injure the motor vehicle interests, which just now most require a few strong men who will suggest or agree not to special laws, but who will plead in no uncertain language for that equal and exact justice which is supposed to be meted out to all regardless of their stations in life.

The common law applicable to all vehicles is sufficient for automobiles; their rights should be no less, their penalties no more. Offences committed with a self-propelled carriage are not more heinous than those which involve horse drawn vehicles. Automobilists and automobile clubs should be the last to make it appear otherwise, which is exactly what the Philadelphians have done.

The Touring Spirit.

Were the question asked of even the most casual observer, what has been the notable feature of ownership and use of the motor car this season, there would be the direct and positive answer: Touring.

Those of us who have read the authors of olden times have been entertained and made to now and then wish that we lived in those days, to have enjoyed the pleasures of travelling by the four horse coach that we might see the country as it really is. In place of this we have taken our in-transit sight-seeing through the limited confines of the railroad car window, and then seeing but the edges, never knowing the thrill of sweeping up hill and down dale, through picturesque settlements and by farmyard gates. Never approaching towns through their clustering beginnings, with their yards and gardens, only running into them, via rail, through cluttered scenes of freight sidings and by the back ends of factories or refuse dumps.

Some of us have had a taste of the pleasures of road scenes by touring on bicycles, but these were limited by time and by our physical ability to travel distances. It was only with the coming of the motor vehicle that we really knew and fully appreciated the real charms of the old coaching days. We have yet to win back the roadside inn, but with the ever increasing motor vehicle touring that has been this year so splendidly introduced that, too, will once more become a feature to add to the picturesque conditions of the whole and to our mundane pleasures.

Then hail to the automobile as the means to teach us the pleasures of the road and to make us acquainted with our country.

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ALMOST A RIOT OF DURABILITY

(Continued from page 67.)

covered two steel balls in his cylinder; he attributes their presence to a discharged employe. The reporters who followed the run, and whose business it was to seek out the troubled ones, led a strenuous existence. As the week wore on the desire to conceal information and to—to lie—became contagious, while some of the red capped individuals who were paid to act as checkers, and who retained the checking sheets, became what can be best described as "chesty." On the road the desire to hide troubles was also apparent, and the means employed was often ludicrous. On several occasions men were seen to drop tools and begin fingering the tires. Once this was done by one of the party on a car, unmindful that the operator was to be seen lying flat on his back at work under the vehicle. There is small doubt, however, that most of the troubles causing stoppages were comparatively trivial. Even on the last day several otherwise clean scores were spoiled by unusual and mentally distressing causes. C. H. Paige, in an Oldsmobile, for instance, accidentally touched the spark controller with his glove and thus shut off power. One of the Whites was halted by some cotton waste blowing, or in some way catching, in the burner and being set afire. The driver became fearful and stopped, when by simply lifting a footboard he could have removed the cause of the fire.



Thos. B. Jeffery "Sees" a Joke.

If they possessed consciences the autophobes and calamity howlers of the sensational press would be tearing their hair in agony. Despite the nearly 500 miles of travel and the many vehicles engaged, there was not an accident of any kind. Of the thousands of horses encountered few pranced and none bolted. They were no shuddering farmers, no terrified housewives, no crying children. Instead there were interested crowds and a warm welcome at practically every city, village and farm. Schools even turned out their pupils to see and cheer the speeding caravan. In one of the Connecticut towns this happened, and later one of the contestants remarked the bright, happy, wholesome appearance of the youngsters.



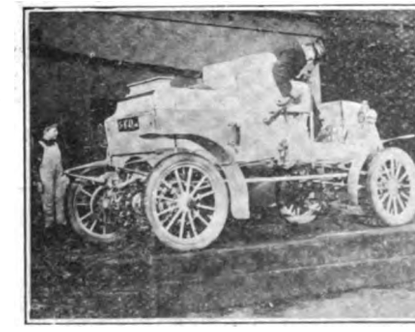
The President's Cup.

"Yes," responded a native of the town, "that's the children's reform school."



Theo Weigle is Tickled.

Where credit is due so many it is difficult to differentiate, but that the steamers, as the Motor World remarked some time since, have emerged from the cloud which hung about them is made evident. There was glory enough for nearly all, but that the Whites again signally distinguished themselves is not to be denied. They have done this so regularly on each public demonstration that did they fail to do so it would be remarkable. Fitted with their condensers, they went through on an equality with the gasolene cars, and made no more stoppages. It is reasonably certain that four of the five earned perfect scores, and that the fifth has but one stop debited against it. The fact that two of the five were delivery wagons makes the record more notable, and should create a healthy call for that type of wagon from the many merchants who have doubted their reliability or had unpleasant experience with other vehicles of the kind. The lone Prescott in the run behaved grandly, and the speed it developed on occasions opened some eyes, as one owner of a powerful French car was heard to admit. The Grouts likewise performed excellently. Of the gasolene cars, the Fournier-Searchmonts appear to have played the lion and made the deepest impression; all three of them are believed to have earned clean scores. The little Oldsmobile runabouts lived up to the Oldsmobile reputation, and were always in the reckoning; the same is true of the Packards and the Knoxes. The new Toledo gasolene car also made an impressive performance.



Weighing in the day before.



Robt. C. Ogden and J. S. Bunting of Wanamakers; W. D. Gash is the "offing."

The finish of the run was devoid of excitement, but was not without incident—incident that served to show the cruelty of Fate and that made amusement for the crowd, but that brought anguish to several men. When in sight of the goal, the doughty little Elmore, with two American flags flying, stopped short and was pushed across the line by its operator and observer. Who will undertake to define the feelings of Manufacturer Becker, who was awaiting it? And Tangeman and his Italian car, probably the only one in all America—a week of superb performance rendered inglorious by being towed the last half mile or so. The forlorn hope of the Locomobile—the only one left with a chance for a clean score, and the chance dashed to earth by trouble that required the car to be pushed home, tandem fashion, by another car! It was fun for the crowd. It was gall and wormwood for those whose hopes the cars carried.

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1. Ben Smith. 2. Geo. L. Weiss at the Wheel of his Packard. 3. O. J. Woodard in the Role of Observer. 4. General View at Starting Point. 5. Kenneth A. Skinner 6. C. H. Tangeman in his Italian Car. 7. Windsor T. White and his Smiles.

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NEW YORK—NEW HAVEN

Good Roads and Fine Weather Makes First Day's Run a Mere Romp—But two Contestants Fail by Wayside.

New Haven, Oct. 9.—Whatever the remaining five riding days may bring forth—and there are not wanting pessimists who declare that trouble is ahead, to-day's ride can be referred to only in superlatives.

Ideal weather, roads at their finest, management par excellence, cars that ran with almost clocklike regularity—these constitute the sum total of the day's doings. The candid recorder cannot abate one jot or title of this panegyric. It is, indeed, too good to last.

Of the 75 cars that began the journey from New York this morning all save two had been checked at the control here at 9 o'clock—one hour before the closing time. The two vehicles referred to were Nos. 44 and 74, a Darracq and a Buffalo, respectively. Both of these failed to reach the noon stopping place—Norwalk. Of these 73 cars the vast majority rolled processionlike into this city between 4 and 4:30 o'clock, most of them having dawdled along, strenuously endeavoring to kill time so as to avoid arriving in less than the minimum period. So well was this gauged that several covered the distance in the exact time permitted, less the ten minutes leeway given them. That is to say, by dint of crawling they managed to escape covering the course in faster time than an average of fourteen miles only because ten minutes was taken from their total time.

The decision of the committee to give this ten minutes leeway was a wise one, and settled what promised to become a burning question. To obtain the highest possible marking a car must average a full fourteen miles an hour for the six days; should it fall behind but a fraction of a minute it would lose a mark. On the other hand, if it exceeded the fourteen miles by the smallest margin it became liable to disqualification for exceeding the speed limit. Obviously, one horn or the other of the dilemma would have to be taken; for no driver could cut matters so fine that he would arrive at each of the twelve controls on time to the second.

To adopt the simple rule referred to was to put an end to all trouble before it had time to begin—to use an Irishism. Consequently the committee decided to adopt it, and this morning typewritten slips were given to the contestants, observers and press men, setting forth these facts. The wisdom of the step was signally demonstrated before the day was out.

Of the first day's casualties the morning run, from New York to Norwalk, 44½ miles, was responsible for the greater part. To the hills and the stone strewed roads, mending being in process in a number of places, this result was largely due.

The record shows that the majority of accidents, of stops and of cases of consuming more than the time required to make a fourteen mile rate, occurred in the morning. The worst showing was made at the start. After that the offending cars steadied themselves and struck what the optimistic are pleased to term their natural gait. Even at this, however, the showing was anything but a poor one.

After leaving Norwalk, and especially after passing through Bridgeport, the going averaged better, the hills ceased to trouble and the cars bowled along like the machines they are intended to be. The 14 miles an hour pace, the fastest permitted, became easier than ever, and no car that was anything near right failed to accomplish it. To be candid, how not to exceed it became the question, and only the most determined loafing availed to answer it satisfactorily.

Under the rules of the present contest the cars compete for a double prize—a first, second or third class certificate, and a perfect record, as computed by marks. This necessitates an enormous amount of figuring, and the work will not be attempted until the journey has been completed.

All that is being done—and this is a big advance over last year—is to issue a list of the arrival and departure of the cars from each control. This Chief Timer Thayer hands to the press men and others interested at night. From this a fair survey of the day's work can be obtained, but by no means an exhaustive one. The stops are not touched on at all, and, therefore, precise deductions, based on the lists, are quite out of the question, and generalization only can be ventured upon. That a car got in half an hour or an hour late, for example, may mean anything or nothing. A tire may have gone wrong, and the car's record then might have been a perfect one, no stops and no lost marks being credited to it.

Of those which do not come under this category the majority were of such a character that no great delay was occasioned. The majority of these follow:

The Autocar, No. 13, had a pump chain jump off and had to make one stop. The Torbenson, No. 19, had four stops, due to a broken wire and water pipe. An Oldsmobile, No. 41, had trouble with its pumps, and the Neftel, No. 50, stopped three times on account of a broken valve spring and cylinder trouble. A flooded carburetter accounts for the single stop of No. 52, a Winton, while No. 62, the Toledo touring car, assigned sparking troubles as the cause of a similar stop. Insufficient steam was the cause of the stop of No. 73, Dr. Carman's Foster steam car.

After a stop of an hour and a half at Norwalk for luncheon the first car was started on the journey to New Haven, 34½ miles. The run was uneventful to Bridgeport, over roads of a fair character. At that busy town, however, the people turned out almost en masse to greet the voyagers. At the points of vantage they were massed many rows deep and cheered vociferously, why, the Lord only knows. But they did cheer. At the turns members of the Bridgeport Automobile Club were stationed with flags and facsimiles of the white arrows used to mark the route; and without this assistance the way would have been difficult to find, for the human wall concealed the others from view. The police arrangements here were very efficient.

From this point the road became very level, and glimpses of the Sound were caught at intervals. About eight or ten miles out of New Haven, however, the course changed to one entirely along the water, which at that time of the afternoon it presented a very beautiful appearance.

Savin Rock, New Haven's summer resort, although almost deserted, was viewed with interest, partly because by this time there was plenty of time to view it. The bi-daily "loaf" had set in, and as far as the eye could reach there was a string of crawling cars that told a tale of reliability that was singularly gratifying. The control was finally reached, and the cars run into the garage and the key turned on them.

Going through Larchmont the first experience with unfriendly authorities was had. The town is marked with signboards stating that the automobile speed laws will be strictly enforced, and to show that this was not an empty boast several officers were posted along the route within the corporate limits.

Most of the cars slackened their pace upon coming to the first sign, but this was not always sufficient to please the zealous guardians of the village peace. Uplifted hands were frequent, although not a team was in sight, and the few houses were widely scattered. Nothing more than warnings were given, however.

Arrangements had been made for a good luncheon at Norwalk, and it was duly provided—for the first comers. These, with tradesmen and press men, who went by train, sat down to a repast that from soup to pie was worth all and more of the 60 cents that was charged for it.

But the late comers were not so fortunate. They found the tables crowded, and if they waited until they could secure places it was only to find that the supply of viands had given out, and that what they got looked like thirty instead of 60 cents.

At the various hotels to-night tongues clattered and the day's experiences were recounted and exchanged. Tired with the ride, many of the visitors went to bed early, but a number of hardy ones were up until past midnight, "doing" the town or otherwise enjoying themselves.

The favorite topic of conversation was New Haven, its college boys, girls—pretty and otherwise—and its hotels. The latter were damned as heartily as anything could be, and that is saying a great deal. It is simple truth to say that they would be a disgrace to a town that made any pretence of being up to date. They were, excepting the Garde, which is away from the centre of the town, small, old fashioned and inconvenient. The Tontine, in many respects the best, does not even have an elevator.

But if the hotels were lacking in these particulars they were very much to the fore in the matter of charges.

Although notice had been given of the influx that would take place, quarters engaged for the observers and arrangements made for the others of the party, no preparations had been made to receive them. Rooms were at a premium, and as the evening wore on it became impossible to do more than get a cot in some room already occupied. For these accommodations the regular prices were almost doubled.

"We pay $20 for our room," said one of a party of five newspaper men to the Motor World representative. "There are two beds and a cot in it, and it was take this or nothing."

All along the line people were complaining of the treatment given them. Observers were "doubled up," entire strangers being allotted the same room and the same bed.

"It is an outrage the way they are treating us," exclaimed Secretary Butler. "We made all arrangements in advance, and here they are breaking their agreements. They are charging almost double for accommodations."

"We pride ourselves on always arranging matters properly," said President Shattuck in the same strain, "and it hurts us to be treated in this way. Personally, I am having no trouble. I have a habit of sending my man along in advance, and he engages my room and leaves my things there, so that everything is ready when I arrive. But I feel very sorry for the others in the party."

It appears that $4 is the regular rate charged the automobilists. It does not make any difference whether there are two or five in the party—there is never less than two—$4 each is the charge, and no kicking avails to have it lowered. In fact, some of the hotel clerks act as if they would be quite willing to encounter refusals, for there are other men, travellers mostly, who would snap the rooms up.

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NEW HAVEN—SPRINGFIELD

Shortest Day's Run was Made With Ease—Hardest Work was to Kill Time—Entertained at Hartford and Springfield.

Springfield, Oct. 10.—A short and easy day's run has left the automobile cohorts in fine condition and almost intact. But two of the seventy-three vehicles which left New-Haven this morning remain unaccounted for.

This remarkable result was really foreshadowed this morning. A round of the garage revealed the fact that there was, in place of the wholesale repairing and rebuilding which characterized last year's run, really very little to do. From 7 to 7:30 the yard presented a busy appearance. At the former hour the doors were opened and the operators and observers were admitted, and the former permitted to enter upon the work of repairing. At 7:30, however, the cars began to pour out to take their places in line, ready for the start. At 8 o'clock the majority of the cars had left and the yard presented a deserted appearance, a full hour before the starting time.

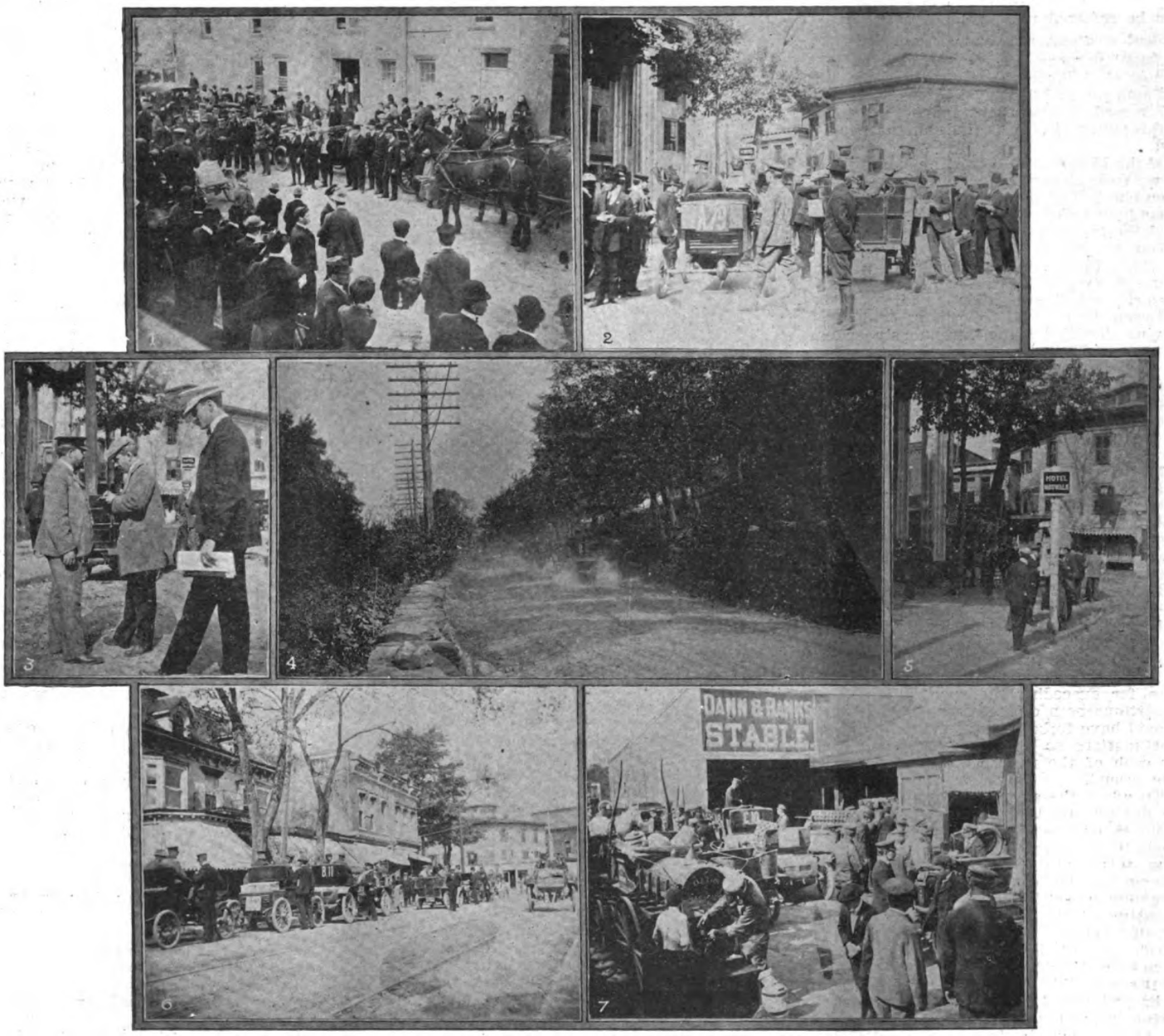
In short, the first day's ravages were few, and a little work in adjusting, lubricating, etc., served to prepare most of the cars for the second stage. No army of mechanics, no trunk loads of spare parts, were needed. The wrong things were easy to right.

Promptly on the stroke of 9 the first car, No. 19, was given the word and got away. Then in twos and threes they were started with great rapidity, until at 9:19:45 no less than sixty cars were on their way to Hartford. One only met with mishap. This was No. 56, an Autocar, which struck a trolley car but fifty feet from the start and bent the front axle badly. It continued on its way without stopping, however.

The roads to Hartford were fine in the main, with a few sandy stretches. The latter gave very little trouble, however. The good roads were superfine, magnificent specimens of State road building, and over them the cars made fast time.

There was a great deal of dust, more than had yet been encountered. Wherever the cars were closely bunched it arose in clouds, completely enveloping cars and occupants. It was of exceeding fineness and penetrated everywhere and caused considerable inconvenience.

At 12:01 the first car was due, or 11:51 if it made use of the ten minutes lee way. It was not 11:51 when the first of a number of cars was seen coming up the hill leading to the Allyn House. Slowly they moved, and the leader, No. 64, an Oldsmobile, reached the control at 11:51:15. As it left New-Haven at 9 o'clock exactly, it will be seen that it was but fifteen seconds over the minimum time, with the lee way counted in its favor. Close after it came cars by the dozen, and it seemed that nearly all of them had been simply waiting for the time to elapse.



1. At the New Haven Control. 2. Arrivals at Norwalk. 3. Secretary Buttler Buttonholed by a Reporter; Starter Thayer in Pensive Mood.
4. Crowding the Pace. 5. Outside the Norwalk Hotel. 6. A Daily Scene. 7. View in a Garage.

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Blundering management on the part of the police caused a scene of confusion. Teams were permitted to mix with the oncoming cars at the controls, and in a few minutes the block was so serious that it became necessary to extend the line away down Asylum street, take the times there and dismiss them.

In spite of the excellence of the roads, the crop of mishaps was unusually large. Nearly all of them, however, were of a minor nature.

A dirty spark plug caused No. 59, a Winton, to stop. K. A. Skinner stopped two minutes to repair a broken wire. A bit of dust on the vibrater caused a bad mark to be registered against No. 32, a Rambler. Battery trouble affected No. 15, a Ward Leonard, similarly. The muffler of No. 37, an Elmore, choked and caused a stop, and No. 77, a Rambler, broke a chain, with one stop resulting. The current was accidently cut off on No. 41, and Oldsmobile, and caused a stop, and engine troubles were responsible for a fifteen minute stop of No. 29, the new gasolene Locomobile. Trouble with an intake valve caused No. 16, a Ward Leonard, to stop twice, and No. 56's, Autocar, bent axle had to be examined to see if it would hold. No. 19, a Torbenson, had four stops due to sparkling and valve troubles.

More serious were the accidents to one of the Knoxes—a broken crank shaft—and one of the Haynes-Appersons, which is reported to have gone into a ditch.

After a few minutes spent in taking in supplies, etc., advantage was taken of the courtesy of the Hartford Rubber Works Co., which extended the visitors a luncheon at the Allyn House. Everything being then in readiness, the afternoon run was started at 1:31 instead of 2 o'clock, as intended.

A short run was before the cars, only 26½ miles to Springfield. For the most part the roads were level, but not very good, being dusty and heavy in places, with a great deal of mending going on in others.

To avoid a bad place a detour was made near Windsor Locks, an extremely sharp turn to the right, down a slight hill, being necessary. During a part of the time President Shattuck and party remained at this spot and gave warning to the oncoming cars.

During much of the last part of the journey the route led along the Connecticut River. The leisurely pace at the end gave plenty of time to enjoy the waterscapes until the city of Springfield was in sight; and soon, too soon for some, the control was reached, it being south of the centre of the place, and reached almost without warning.

The second day's run has given some lines on the work of the number of the cars. Considerable fencing has been going on between K. A. Skinner's De Dion and L. D. Fisk's Panhard, of the big cars, and two Olds, two Knoxes and two Stevens-Duryea of the light cars, to see which shall arrive first at the controls.

As a large number of the cars are taking it is both a fast and a slow race. Brushes take place during the early part of the runs, and then manœuvring takes place to see which can get to the timers in first place and yet without arriving there too soon. Very amusing is the work that results.

As a large numberof the cars are taking advantage of the ten minutes' leeway given them, there came near being serious trouble this afternoon. The garage is situated in the southern part of the town, a mile or more from the central business portion. Upon crossing the long bridge over the Connecticut River, Main street was soon reached, and with it the green flag denoting the timing place. As soon as the flag was seen there was begun a loafing match, compared to which all that had gone before was high speeding. In spite of all they could do some of the cars got in a little ahead of time, and their occupants are in fear or trembling lest they shall be punished.

There is small prospect of this, however. In a conversation with the Motor World man Chairman Scarritt said:

"We shall treat each case of early arrival on its merits. What we aim to do is to prevent any flagrant violation of the rule."

Later, at the banquet, he referred to the matter indirectly by speaking of the slight shortening of the course this afternoon between Hartford and Springfield, owing to repairs that were going on, stating that allowance would be made on account of it.

In marked contrast to that at New Haven was the reception of the party here. At the former place they were left entirely to their own resources. Here tradesmen, clubmen and the authorities vie with each other in extending a welcome.

Some 300 guests sat down at the Cooley House on Friday night, when the Knox Automobile Co. tendered them a banquet. Prior to it an impromptu reception was held in the lobby, and while the orchestra played popular airs the automobilists sang the choruses in unison.

Everybody was in a jolly mood. In a far corner a dozen or so congenial spirits—Percy Owen, H. W. Whipple, W. J. Stewart, O. J. Woodward, R. P. Scott and others—played high jinks. From the bivalves to the coffee hilarity reigned, and when President Smith of the Knox Co. called for order to hear the speakers all were in a mellow mood. Mr. Smith acted as toastmaster, and played the part well. In a few well chosen sentences he bade the guests welcome, and then introduced Mayor Ellis.

The latter was witty and entertaining. He told of the pleasure the visit of the automobilists gave him, in contrast to the consternation such a visitation would be supposed to cause, and said that the police had been instructed to give them all possible freedom. Concluding, he called on President A. R. Shattuck of the A. C. A.

The latter devoted himself to a resumé of the great changes wrought in three years. In 1899 there were but very few automobiles in this country—less than a hundred—while now the number could not be less than 12,000. He gave some amusing experiences connected with the famous run from New York to Philadelphia in the year referred to. Then he passed on to the subject of roads, and related what had been done in Massachusetts, praising in the highest terms the work of the State road builders. He strongly urged State supervision of road building, and said the State and not the small towns must bear the chief part of the expense incurred in their construction.

After a selection by a male quartet W. E. Scarrett, chairman of the contest committee, was called on, and spoke at some length, ranging from the humorous to the serious.

It was nearly midnight when the assembly broke up, and the entertainment was voted a complete success.

When Chairman Scarritt to-night touched on the hubs of H. W. Whipple's Packard car he made the hit of the evening. The car has attracted no end of attention, and nearly everybody is talking about it.

The ends of the hubs project nearly 12 inches beyond the spokes, and are probably four inches in diameter. The enormous nuts on the end are of brass, and as the wheels revolve the brass glistens in the sun and can be seen for a long distance. All the other drivers give the car a wide berth, for the impact of those hubs would be terrible

"It was formerly said that the universe had but two hubs, and that Boston was one of them," said Mr. Scarritt in his inimitable fashion; "but that is true no longer. Since October 5 last there have been six hubs, and Whipple owns four of them," and the shouts that followed almost shook the roof.

SPRINGFIELD—BOSTON

Over the Mountains to Worcester—Dr. Hovestadt's Car Breaks Steering Knuckles—Where the Lying Began.

Boston, Oct. 11.—The last and most astonishing of an astonishing three days came to a close in a slight drizzle of rain, the precurser, apparently, of a settled storm. The latter, even if it is over by Monday, will leave the roads in such a condition that they will play havoc with the hitherto victorious cars.

The performance of these cars during exactly one-half the journey has been little if any short of marvelous.

Out of the 75 cars that left New York no less than 72 of them came to the scratch this morning. When the control closed tonight 68 cars had been recorded by the checkers, and another, Dr. Carman's Foster, came in at 11 o'clock. To emphasize the matter still more, almost four-fifths of the cars had to "kill time" for miles into Worcester in order not to do better than an average of 14 miles an hour; and the majority of them needed the ten minutes lee way given them by the committee. This was during the control covering not only by far the longest stretch of road—52 miles—but the worst roads of the trip as well.

During the two preceding days these roads had been pictured as heartbreakers that would place black marks on many previously perfect records. But to-day proved the prophecy to be baseless. Come good, come bad, the roads mattered little; cars bowled along or ploughed through in a thoroughly satisfying manner.

Not only was the day's run thus highly successful, but it was also interesting, and a source of extreme delight to those fortunate enough to take part in it.

The same superexcellent management characterised it that has marked the entire run. Seventy cars were sent off in the remarkably short space of sixteen minutes; and throughout the entire day matters moved with equal precision and dispatch. One cannot criticise, but only marvel at the perfection of it all.

The morning came with more than a trace of dubiousness about it. Hazy at first, the sun seemed to be struggling to pierce the clouds, and with a good chance of success. But when 9 o'clock came matters were distinctly worse. There was no sign of the sun. Dull skies and a moist atmosphere ruled, and a steady rain, had it set in at any moment, would have surprised no one. As the event proved it held off until the last portion of the run and then came down but gently.

The dust so much complained of on Friday was almost entirely absent. Evidently there had been more or later rains east of Springfield than to the south of it. It was only where the cars were closely bunched that the dust was at all bad.

The same abrupt progression from perfect roads to others unworthy of the name continued during the morning. For several miles out of Springfield the way was ideal; then, without other warning than was afforded by the sight of a different appearing road, the cars bumped into a trail that seemed to have taxed the ingenuity of man to make indescribably bad—just as severely as its forerunner must have done to make perfect.

Then, and again without warning, after a number of miles of this, during which the cars plunged and ploughed and slid like so many rubber balls, the glorious smooth, firm highways would come into view, and

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again the cars would again revel in their delights.

All praise to the builders of these latter roads. In his felicitous speech at the banquet last night President Shattuck remarked that not even Napoleon, when he builded roads across the Alps, nor other European masters of the art of road-building, achieved better results than had the Massachusetts Highway Commission. And he was right. It was a pleasure to merely look at their handiwork. No picture could be more beautiful. The manner in which the roads curved this way and that, to lessen the severity of the grades, the scientific banking of the turns, the perfect rounded tops of the hills—all were beyond praise.

As to the bad spots, and they were between Springfield and Worcester many and long, the least said about them the better. Frequently they were little more than trails, sandy and shifting. In places the flying cars cut in for the best part of a foot—not a straight path, nor a stable one, but zigzagging and constantly changing.

As it turned out the bad roads, instead of causing a break in the hitherto solid phalanx of cars, merely cemented them into still firmer union. Had there been openings in their armor they would have developed this morning. None but reliable cars, in good order and well handled, could have come through such an ordeal almost unscathed as they did. The few breakages merely showed what would happen when the strain became too great. It is true that an entirely different story might have had to be written had the threatened rain come; and the return journey may compel this story to be written. The sandy nature of the soil, however, holds out hope that even a hard rain will not make the going very bad.

Wild and picturesque in the extreme was the country through which the morning run led. For miles no vestiges of human life were visible. Hills were on either side, with now and then a pushing stream flowing and threading the valley in company with the road. Rocks and sand, with trees and bushes, were almost the only things in sight.

In contrast to yesterday there was much hill work. That in the morning was the most trying, for it was over bad roads, and the hills were for the most part longer and steeper.

Beginning with a grade that must have been more than a mile long, for the most part straight and only moderately steep and which lay just a short distance east of Worcester, the worst of the afternoon's hills was over. Thenceforth nothing of a character to give trouble was encountered.

But on the morning run, near East Brookfield, the Nelson Hill of the run was encountered. It was absolutely unheralded. Even the first sight of it failed to reveal its true character. Only when its ascent had been begun did it stand revealed in its true colors.

Anywhere from half a dozen to a dozen and a half cars are said to have come to grief on it. Some of them stuck and had to be pushed; others were lightened of part of their loads before they could be induced to go to the summit. Of a steepness that in places probably exceeded the 17 or 18 per cent. of Nelson Hill, last year's heartbreaker, the surface, although nothing to brag of, was a big improvement over the latter, while the hill itself was much shorter. A few miles further on another exceedingly steep hill was encountered, but it proved to be not quite so formidable as the one referred to.

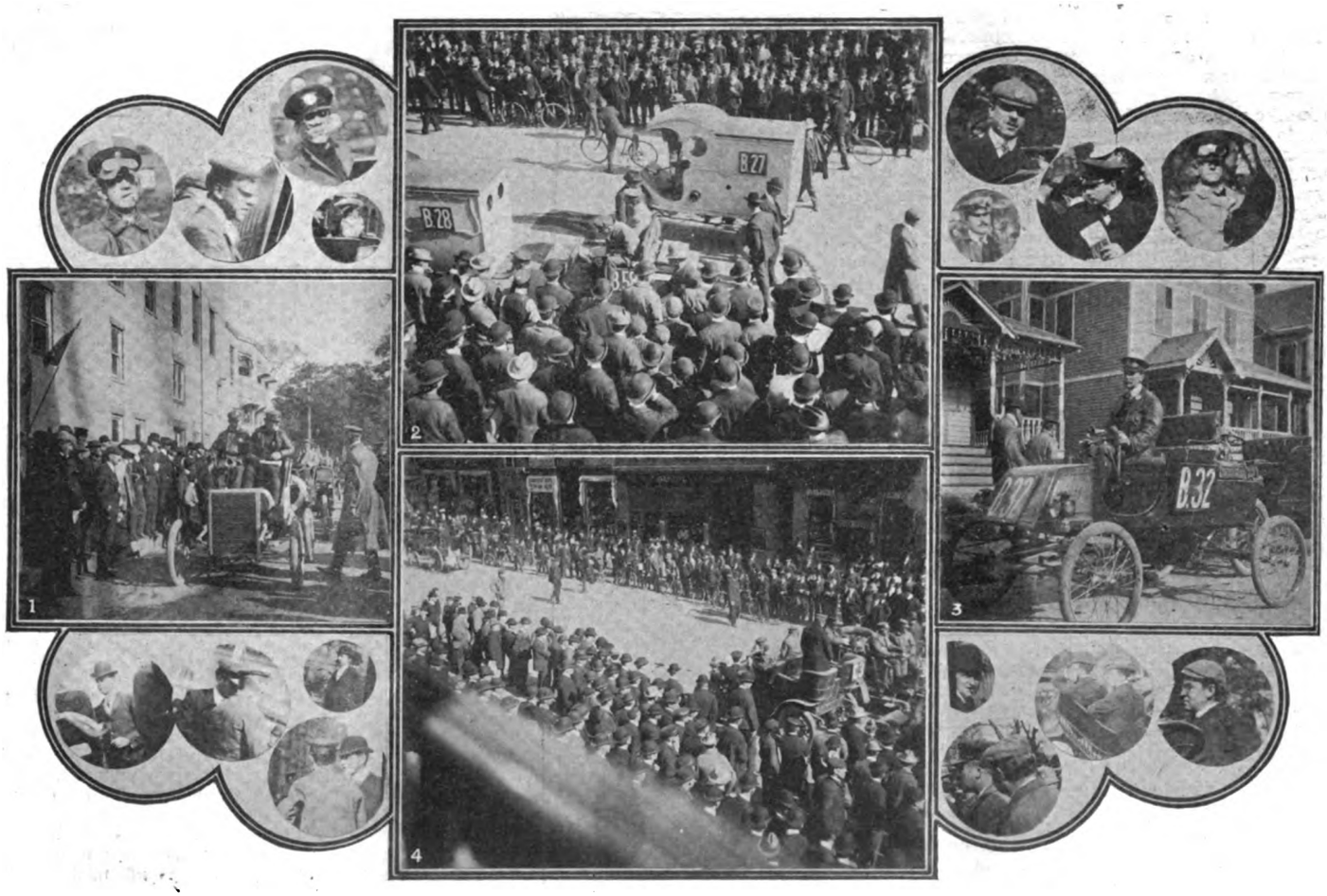
It would be noticed that helping hands are said to have been extended on the big hill. The qualification is made with design, as will be seen.

Mendacity of a cheerful and utterly shameless character developed to-day among the drivers and observers. Where on Thursday a desire to be truthful in answering questions was noticeable, and on Friday great candor and freedom was observed in the same direction, Saturday showed a great difference. The drivers had cut their eyeteeth, and their observers had become affected with a spirit of camaradarie that was touching to behold. Rather than reveal mishaps they lied unblushingly and with a hearty good will. A wall of brass was upreared to balk the efforts of the press men to obtain the truth. And this, seemingly, out of mere bravado or a determination to show a brave front to the enemy.

Time and again the Motor World man was met with a cheerful "no trouble," when the truth was otherwise. Incredulity secured only a repetition of the statement; expostulation brought forth an aggrieved look.

Passing the hill referred to, after about four-fifths of the cars had passed, the Motor World car was stopped to institute some inquiries. Fifteen cars were asserted to have been helped up the hill. Later the occupants of other cars related how they had seen cars thus aided. But scarcely a driver or contestant was found who would admit that they were among the number. A remarkable fact, truly.

It is only fair to say that much of the trouble on the hill was due to the blocking



1. Leaving New Haven. 2. White Delivery Wagons Leaving Hartford. 3. Scene in Hartford. 4. One of the Ramblers.

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of the road by cars ahead. A big foreign car (not in the contest) caused trouble for half a dozen cars by sticking on one of the "thank you marms" that abounded. A Ward Leonard car escaped being stalled by pulling over into the ditch, the observer and even the driver jumping out to lighten it, and then going around and pulling into the road again, a marvellous bit of work. Other instances of clever driving were also in evidence.

In a stern chase of 54 miles, designedly undertaken with the view of viewing the tail enders at close range, the Motor World car's occupants found little to reward them. Not until almost ten miles from Springfield had been driven was the first car overtaken, and it was moving along nicely. Just before Palmer—16 miles—came in sight the first distressed car was seen. It was No. 73, a Foster, with a broken pump. A little farther on No. 54, Dr. Hovestadt's De Dion, was met in a sad plight, both steering knuckles having snapped off, due to plunging into a sandy hole. Then came No. 65, the Automotor Company's entrant, with some trivial accident. Finally the unfortunate La Roche's Darracq was encountered near Spencer with a broken piston. These made up the list of the halt, the maimed and the blind between Springfield and Worcester, the latter place being reached before many of the cars were due there.

A long line of cars, killing time, their occupants bandying jokes, choked the road into Worcester for several miles.

Near Spencer, about 11 miles west of Worcester, a sign at a cross road indicated that the latter led to the world-renowned village of Podunk.

As at other noon controls Worcester witnessed but little tinkering. Taking on supplies, lubricating, going over important parts to see that they were all right—this usually took but a few minutes and left the drivers free to snatch something to eat and still have time to wait before the hour and a half allotted to luncheon had elapsed.

The run from Worcester into Boston was a fitting finale to the day's ride.

Flushed with the unexpected success over the dreaded bad stretch and with the thought of Boston and the completion of one-half the task in mind, the occupants of the cars were a good natured, enthusiastic lot. Free from anxiety they flew along, eating up the miles in rapid succession, and with the usual result. The last few miles were taken at a crawl, and even then the finish was cut very fine.

Following the morning's procedure, the Motor World car was started from Worcester when all but two or three of the cars had been sent off. A rapid run was made to Boston, and along the entire route not a single car was stranded, except for tire troubles.

Occasional stretches of road not up to the afternoon's standard were encountered, but nothing that could be termed bad. Nor were the hills of a character to cause trouble.

Somewhere east of Northboro the first upset in the road schedule was experienced. Where Southboro should have been reached Marlboro in some mystrious manner appeared in its place. On its outskirts an inquiry developed this much, but how or where the proper turning was missed is still a mystery. The generally accepted theory is that the ubiquitous small boy removed a sign and in its absence the autocade swept around to Marlboro instead of taking a short cut to Southboro.

The detour added several miles to the length of the run, and permitted the cars to cut out a faster pace for the greater part of the way than would otherwise have been possible.

Passing through the main street of Marlboro, where there had been a fire, the first comers had trouble getting through the fire lines, the entire fire department being lined up there. A way was cleared in time for the first contesting cars, however, and two or three miles further on the road that should have been taken was come into again. Meanwhile much anxiety had been caused, for it was plain that something was wrong.

The sight of nearly a score of the cars drawn up by the roadside, their occupants waving a welcome and bearing flags, showing that this was the Marlboro Automobile Club, relieved the tension, however, and a few yards farther on a welcome white arrow showed that the lost had been found.

From this point the cars passed towns and suburban villages in rapid succession. At Framingham Center, South Framingham, Natick and Wellesley crowds had assembled to view the sight.

At Wellesley, Boston's beautiful suburban section was entered, and little knots of people were gathered everywhere, and the sight of them and of the many handsome residences, combined with the excellent roads, more than outweighed the gloomy weather, although the lowering clouds were beginning to drop a little rain. By the time the city was reached this had developed into a drizzle, which rendered the tortuous route into the Park Square garage more slimy and slippery than a hard rain would have done.

Once more the time of arrival was cut exceeding fine. According to the schedule the first car to arrive should get in at 5.24, or, with the 10 minutes leeway deducted, at 5.14. At 5.14.15 three cars crawled up to the point where the control had been established, all in a bunch, and all getting this time. They were K. A. Skinner's De Dion, a Stearns steamer and a Ward Leonard.

It was a jubilant throng that filled the lobbies of the principal hotels this evening. Baths and the donning of such clothes as had been brought or sent along consumed only a short time, and after a hearty dinner crowds gathered and talked over the day's events or went over to the reception tendered by the Massachusetts Automobile Club.

Of the three days this one has been marked alike by the most serious and the most trivial mishaps. Two cars—a De Dion and a Torbeson—have been put out of condition, as already noted, and do not seem likely to resume. One other, a Darracq, has so far failed to turn up also. On the other hand half a dozen annoying little things, some of them the result of carelessness, have marred otherwise good or clean scores.

For example, K. A. Skinner cleaned an intake valve before the start and tightened it with his fingers only, instead of with a wrench. It came loose, of course, and he had to stop to fix it. One of the Rambler cars developed a leaky water pipe and had to make one stop to put it sufficiently to rights to let it get in to Worcester. A Ward Leonard had a spark plug break 50 feet from the Springfield control, and its first stop of the contest resulted. A Rambler had to make a short stop on account of a heated engine. The other Leonard car developed trouble with its battery and was stopped in order to fix it.

There was a great competition among the steam men, the Whites alone excepted, to get first to the water tanks at the water stations. They would dash up to them, stop suddenly, jump out with their coils of hose in one hand and drop the end of it in the tank. It would take anywhere from three to six minutes to fill up, and if a car had to wait for a place at a tank it took double the time. Consequently they were always in a hurry.

BOSTON—SPRINGFIELD

Return Journey Commenced on Muddy Roads Which dry by Afternoon—Stiffest Hill Causes Very Little Trouble.

Springfield, Oct. 13.—Up and away betimes were the great majority of the cars this morning. In view of the fact that the day's run was the longest of the return trip, and that of the afternoon the longest and worst of the two, the run committee decided to permit departures to be made at 8 o'clock. Any driver, however, had the privilege of waiting until 9 and thus finish his repairs.

As it turned out, very few availed themselves of the permission. There was the usual small amount of serious repairing, and 7:30 o'clock found many cars lined up in Columbus avenue ready for the word. By 8 o'clock there were few absentees.

Although the morning dawned with overcast skies and a heavy mist, it held out promise of a decided improvement. The rain of Saturday night and the greater part of Sunday had ceased, and a sunny day was sure to dry the roads. The latter were still wet and, before many miles had been covered became exceedingly heavy. As Worcester was approached, however, they became dryer, due to the fact that there had been less rain and that the soil was of a more sandy nature. Between Worcester and Springfield they had even improved over Saturday, although there were many mud holes.

The promise of sunshine was fulfilled, and this, combined with the balmy air and the absence of dust, made the day's ride an exceedingly pleasant one.

Taken as a whole, the day's run has been but little less successful than those of last week. The morning journey was a mere romp. An overwhelming majority of the cars pursued their usual course—made haste for the greater part of the way, and then, their time of arrival rendered certain, "loafed" in to the control. In the afternoon much the same tactics were pursued, with the exception that the cars were a little more scattered than usual.

The number of cars starting from Boston was ——. This was the result of the arrival of an Autocar and the Torbenson entry. The former had sprung a leak in the water tank near Meriden on the second day, and this caused the engine to heat and ruin the shaft bushing. Matters had been put to rights, however, and the car reached Boston yesterday. The Torbenson car had come to grief on Saturday, a deflated tire causing it to dash into a curb and buckle a front wheel rim. The rim was taken off and straightened and the car reached Boston the next morning.

At Worcester the arrivals numbered 72. An Oldsmobile reached the control, followed by nearly a score of other cars. The attempts of many of these to kill time were laughable. For more than a mile before the timing station was reached the cars literally crawled. Many were zigzagged asross the street, impeding traffic, but attaining their ends.

Only five cars made penalized stops, if their occupants are to be believed. There is no doubt that the list is really larger; but how much it is impossible to say. At least one observer is known to have stated that his car made no penalized stops, while the contrary is the case; but it is believed that his report notes the stop and that he gave such an answer out of mistaken loyalty to the driver. It may be stated here that there is widespread dissatisfaction with both the

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verbal reports made and the lack of official daily statements.

Under the present method all is guesswork. The elaborate tables built up by the pressment are very vulnerable. Observers or operators frequently tell two stories, and it is possible that their reports will tell still a third. This sort of thing vitiates the findings of the pressment and throws suspicion on everything that is reported. It is pretty well recognized now that the proper plan would have been to issue nightly reports, based on the observers' books. Such a plan would be difficult to carry out, but not impossible.

That there were but few stops is pretty well indicated by the morning run of the Motor World car. It left Boston after nearly all the cars had started, and pushed on to Worcester, reaching there ahead of the first arrival. Yet but one of the score of cars passed was stopped; that was No. 43, a Packard.

When the cars came in, however, No. 43 and four others acknowledged that they had had stops. They were as follows:

No. 39, De Dion, one stop; three minutes; broken trembler.

No. 41, Olds, one stop; broken connection, spark coil.

No. 80, Foster; one stop to light pilot.

No. 43, Packard, two stops; carburetter float and clutch troubles.

No. 59, Winton; one stop, six minutes; to repair broken trembler spring.

Contrary to expectations, the road this side of Worcester was improved by the rain. The sandy nature of the soil and the hills caused the water to be absorbed or shed, and the good stretches were better than ever and the bad ones no worse.

Nevertheless, the run was a severe one, and many troubles are reported in consequence. Most numerous of these were the tire troubles. Punctures were frequent, and cars were observed by the roadside pumping tires, removing inner tubes, or in others repairing the damage. It is difficult to account for this. There was but little road mending and but few stones. Yet there were probably a score of stops solely on account of tires.

Other stops were not infrequent, as the appended list of penalized stops will show:

No. 39, De Dion, one stop; valve trouble.

No. 43, Packard; one stop; adjusting chain.

No. 79, Olds; one stop for water.

No. 61, Grout; one stop to make steam.

No. 38, Elmore, two stops, one on Leicester Hill, the other caused by apron catching in gearing.

No. 31, Stevens-Duryea; one stop; broken chain.

No. 59, Winton; one stop; broken trembler spring.

No. 29, gasolene Locomobile; one stop on Leicester Hill; engine stopped.

No. 8, Lane, one stop; valve stem lost out of the cylinder lubricator.

No. 58, Rambler; one stop; battery trouble.

No. 56, U. S. Long Distance; one stop, one hour; broken steering knuckle.

No. 73, Dr. Carman's Foster; one stop; valve trouble.

During the morning run an opportunity was afforded to view the place where almost the entire cavalcade went wrong, near Marlboro, on Saturday. Before coming into Southboro the road selected turns sharply to the left, while the main road keeps straight on alongside the trolley line tracks. The removal of the arrow caused the turn to be passed unnoticed.

Considerable trouble was expected to materialize at the 15 per cent grade leading into Leicester. The Motor World car was stopped there in advance of the other cars, and preparations were made to see everything that happened.

To the general surprise, however, most of the cars climbed the hill easily. It was a stiff climb, put perfectly straight, with no "thank you, ma'ams," and with a fairly good surface.

Three cars were unable to surmount it without a stop, viz., the new gasolene Locomobile, an Elmore and a Grout. A number of cars, probably six or eight, had to lighten their loads and be pushed up.

An astute farmer's boy had provided a



1. Oiling up. 2. J. B. Becker Talks Elmore to an Observer. 3. Ben. Smith Studies his Book.

pair of horses to tow helpless cars up Leicester Hill. There was no call for his services, however, and as he moved away he was greeted with derisive remarks by the occupants of the toiling cars.

When Foster Hill, the bad one of Saturday, was reached it looked even steeper than at the time of climbing it. There can be little doubt that it was almost as difficult a hill as Nelson Hill, with an even steeper grade. Consequently the great number of cars ascending it speaks volumes for the improvement one year has made.

A few miles beyond Foster Hill the steepest grade of the run was met with. It was short, but with a grade that could not have been much less than 25 per cent. But it was possible to obtain a good start and rush almost all the way up. It was historical ground too, as was attested near Brookfield by a stone forming part of a fence and bearing this inscription:

"Here stood the fortified house besieged in King Philip's War."

None of the contestants, of course, paused to read it. All along the route the automobilists were given a hearty welcome. Crowds gathered in all the towns and villages and cheered to their hearts' content. Everywhere there was the best of goodwill, and cries to go faster were often heard. As before, horses were brought out to be broken to the sight and sound of the cars.

A short distance out of Worcester the warning was given to watch out for bicycle policemen who wished to arrest a few automobilists. A slower pace was maintained and the bluecoats were robbed of their prey. As one of them put it to the Motor World man:

"We don't't care if nothing greater than twelve miles an hour is ma le. But the people are complaining of too much speeding, and we have to do something in the matter."

To-night a theatre party at the Nelson is in progress, the visitors being the guests of the Stevens company, of Chicopee Falls. Following it will come a smoker at the Worthy House, tendered by the local club.

The total number to reach Springfield to-night was 69 cars.

Not very far east of Worcester this morning an odd sight was witnessed. A wagonload of wood was encountered, and right on top of the wood was seated a woman wearing a calico dress and a sealskin coat. A tonneau car went by the team, and a ribald young man in it greeted the lone female with, "Good morning, Carrie." She pursed her lips, looked straight ahead and said nothing, whereat the occupants of the car laughed loudly.

Near Wellesley this morning the car which contained Chairman Scarritt and W. J. Stewart narrowly escaped having a serious accident. The road was very slippery, and in making a turn the driver of the car lost control of it and the rear wheels started to skid. It swung completely around, and just escaped crashing into a telegraph pole.

"We came near to giving you newspaper men something to write about this morning," remarked the affable chairman to the Motor World man in the Massasoit to-night in relating the circumstances. "For a minute visions of the Fair accident came before me, and I was heartily glad when we came to a stop and found that no harm was done."

"You had better be careful how you go through Spencer," remarked a native of a little town west of Worcester, where the Motor World car stopped to take water.

"Why?" he was asked.

"Because they are laying for you people. A man went through there last week on the way to Worcester, and he raised hell. Went about 40 miles an hour through the town, slap dash, making everybody scatter. It was one of them big French machines, red, with a rather stout man driving it. They telephoned ahead to Worcester and tried to stop him there, but did not succeed. So they are going to arrest anybody that goes through fast."

Upon reaching Spencer, however, either because the pace was moderate or because the countryman had stretched the matter, no trouble was encountered.

To-night L. D. Fisk, of Hartford, related a story at the Tontine, which may or not be the sequel of the Spencer yarn.

"I went through to Boston last week, and in places 'hit it up' pretty lively," he said.

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"Just after getting into Worcester and putting up at the garage a man came in and began to make some inquiries about an automobile that was wanted for speeding through Spencer. The authorities of the latter place had telephoned about it, and he was looking for the man. 'Did this machine,' he asked, pointing to mine, 'come that way?' 'Oh, no,' was the reply; 'it came from Boston.' So," concluded Fisk, "the ready reply of the man saved me, if it was really me they were looking for."

The hero of the theatre party to-night was Percy Owen, that mild mannered, innocent appearing gentleman who presides over the destinies of the Winton establishment in this city. When the "leading lady" started to sing that pathetic ballad, "In the Good Old Summer Time," Owen stepped from his box to the stage, gave his hand to Miss Lee and executed a cakewalk to the catchy tune amid the tumultous applause of his fellow voyagers.

It was Owen, also, who at the smoker, somewhere near the wee small hours, told for the hundredth time his famous story giving his version of the Prodigal Son. When he came to the end, where the loving father told his son that in honor of his return he would kill the fatted calf, which he had for just such an event been keeping for "years and years and years," he was cheered to the echo.

The speeches at the smoker were of a serio-comic character. W. J. Stewart acted as master of ceremonies, and did it well. E. E. Britton related a funny story of an Hebraic gentleman's experience with an automobile, and R. P. Scott told of the cars he had bought that did not work. Dr. Doolittle, of Toronto, told of his being in London in 1896, when an American car, the Duryea, won the Brighton race.

Chairman W. E. Scarritt passed into a more serious vein when he intimated that the 1904 run would be to St. Louis. He then went on to speak of the splendid showing made in the present run, and compared it to the recent British tests.

"Of the more than 80 cars starting in that contest," he said, "but two came through with a clear record. Then, two weeks later, the committee, with typical British justice, discovered that an American car, the White, had left a garage a minute late, and deposed it from its position, leaving a British car the only one to make a perfect score."

East of Leicester a Good Samaritan was encountered. He had a wagonload of apples, and he dispensed them with a generous hand to everybody that wanted them—and that was about everybody in the party. The Motor World men got a good supply, and thereafter for a number of miles every car they passed had at least one passenger munching apples.

F. A. La Roche had no end of trouble with his Darracq during the first half of the run. He asserted most positively that the engine had been tampered with by a discharged employe. He found a couple of steel balls in one of the cylinders, he stated to the Motor World man, and it was reported that he had also found a piece of waste choking up the outlet from the gasolene tank.

From Boston down, however, the car ran perfectly. La Roche expressed the hope at Worcester that his troubles were over, and such proved to be the case.

Although Dr. Carman did not get into Boston until 11 o'clock on Saturday night, in a heavy rainstorm, owing to a slight breakage on his Foster steamer, he was in fine spirits, and declared that he was enjoying himself immensely. He made the return journey in good shape.

SPRINGFIELD—NEW HAVEN

Approaching the end With Nearly all Cars in Good Shape—Two Contestants Quit—Dusty Roads Again Encountered.

New Haven, Oct. 14.—With a practically clean sheet to Hartford, and a rush of 60 cars in less than half an hour here this afternoon, it seemed as if to-day's short run would be the most successful of all.

But quite otherwise the case proved to be. Four cars met with mishaps, most of which seem certain to result in their withdrawal from the contest. Outside of these the day's happenings were few, and the splendid record made was yet further improved upon. Seventy cars started from Springfield, and as many loafed into Hartford. To-night two are missing, one is out of the contest and another will probably be compelled to withdraw also.

The unfortunates are a Foster steam car, No. 6, which broke a crank shaft just out of Hartford, after having, it is claimed, made a perfect record up to that time. It was thereupon withdrawn from the contest. About eight miles from New Haven a De Dion, No. 71, broke a piston and was ignominiously towed into the control by L. D. Fisk's Panhard. The Locomobile gasolene car, No. 29, got into trouble immediately after leaving the Hartford control, and was stopped for repairs. A bolt, or bolts, in the differential gear is given as the injured part, and it was thought that it would be able to start on in a few hours. The fourth car, which is still missing, was No. 15, a Ward-Leonard. The Motor World car passed it six or eight miles out of New Haven with its driver at work on the engine. Just what was wrong is not known.

Outside of these casualties the day's crop of stoppages is a meagre one.

At Hartford C. E. Proctor's Winton, No. 59, reported a two minute stop, due to a trembler needing adjustment. A Locomobile, No. 35, caught fire and scorched the body. Its observer pleaded guilty to one stop to relight his burner. Just before reaching Hartford the Franklin contestant, No. 45, had trouble with a dirty sparking plug, which caused a stop of two minutes.

In the afternoon No. 19, the Automotor, had three stops, due to battery troubles, a broken wire and a leaky water tank. Stop for water, penalized, was made by No. 56, a Long Distance car. These, with the more serious accidents reported previously, make up the day's list, except that something happened again to No. 45. What it was its operator and observer both refused to state, in spite of persistent inquiry on the part of the Motor World man.

The morning dawned a bit hazy, but the sun soon broke through the clouds and an ideal day was promised. The members of the party were in high spirits, and a start could have been made at 8 o'clock, as was done yesterday, had it been deemed advisable.

But the day's run was a short one, over excellent roads, and the only change made was to lengthen the noon stop by nearly an hour. This was done in order to give more time for the banquet at the Allyn House tendered by the Hartford Rubber Works Co. An early finish was possible in spite of this, as the first cars reached New Haven before 4 o'clock, although the afternoon's run was the longer of the two.

For a number of miles after leaving Springfield, 70 cars being sent off in 11 minutes, the road was bad, being soft and rutty from the rain of Saturday night and Sunday.

The cars were obliged to proceed in single file and at a slow pace. To add to the unpleasantness, the township authorities at one point had been making what they were pleased to term repairs. They consisted in dumping soft dirt in the centre of a road already worn down at the sides. Into this the passing cars cut deeply and the going was very heavy.

When about half the distance to Hartford had been covered the roads became dryer and better generally. Consequently it became necessary to go slowly in order to kill time.

Something had evidently "dropped" in the police department, for arrangements had been made to regulate the traffic at and around the Allyn House, the noon control.

The officious Sergeant Creedon was there, but he was subdued by the presence of his captain. The latter took charge of matters, and kept the confined space as clear as could be done without utterly blocking the traffic. Consequently there was nothing to complain of.

After enjoying the hospitality of the Hartford Rubber Works Co. at luncheon a start was made promptly at 1 o'clock, a large crowd of people witnessing it.

Upon emerging from the city it was seen that the excellent roads entered upon were quite dry. As the cars were closely bunched clouds of dust arose, although the roads themselves were in just the proper condition, neither too wet nor too dry. Consequently goggles were once more brought forth and donned.

A departure from the usual plan was being made it was soon seen. Instead of "hitting up" the pace from the start, and loafing at the finish, as on other days, a steady, even pace was cut out. It seemed to be recognized that as the roads were almost uniformly good, there was no necessity for haste in order to allow for a slower pace over bad roads at the finish, as had been the practice.

It is true that the famous Wallingford sand region presented some obstacles to the easy progress of the cars. The latter cut in deeply and labored somewhat. But the stretch was not long, and, being over, the going became better than ever.

This afternoon's run has been marked by large and enthusiastic greetings from the towns and villages passed through. Meriden was particularly noticeable in this respect, the progress of the cars through it being one continued ovation. School children were out in a dozen places, recesses having apparently been declared at each institution of learning as the cars went by.

When No. 16 car came to a stop in front of the Allyn House the observer was asked the stereotyped question, "Any penalized stops?" No reply was made, and the question was repeated, but with like result. Then the driver was tried, and he, after hesitating a moment, was frank enough to say that he had been warned not to give any information. Asked who told him this, he said it was a man with a red cap—the badge of the timers and checkers. Then he moved off.

A little later the Motor World man encountered Chairman Scarritt and related the circumstances, and asked if any such instructions had been given. He replied that nothing of the kind had been done, to his knowledge.

At this moment the driver of No. 16 passed. He was stopped, and Chairman Scarritt told him that the question of the newspaper men was entirely legitimate, and, while no one was compelled to give the information desired, it was entirely proper to do so. Thereupon the driver very civilly stated that he had had two trifling stops during the morning.

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Desiring to extend hospitality of some sort to the visitors while at Hartford, the Hartford Rubber Works Co. made arrangements to entertain them at luncheon both going and returning, on Friday and Tuesday, respectively. They did so, the contestants being met at the Allyn House by the officers of the company, consisting of Lewis D. Parker, president; F. H. Turner, vice-president; W. H. St. John, secretary, and Burton Parker, Frank Day and W. H. Kirkpatrick, of the travelling staff.

After an enjoyable hour and a half in Hartford, and just previous to the departure of the vehicles, President Shattuck, of the Automobile Club of America, on behalf of the contestants and their friends, extended the thanks of the organization to President Parker for the many courtesies received.

Although his car came to grief early in the run, Knight Kneftel could not stay away from the party. He met it at New Haven on Tuesday night and accompanied it to New York.

NEW HAVEN—NEW YORK

Sixty-eight Cars Cover Last Stage—Committee Effectually Stop Scorching —Big Crowd at the Finish.

New York, Oct. 15.

Another bright, sunshiny day, with just a trace of keenness in it, had been reserved for the last stage of the run. Enjoyable as the latter had been, everybody was glad that it was approaching a conclusion and that New York was so near.

Evidently there had been a fire sale of megaphones somewhere in New Haven, for a considerable number of the party had equipped themselves with these useful implefive minutes before the start some one started to blow a horn, and in an instant the air was filled with the strident sound of other horns. The noise was added to by ments and were prepared to use them. About the megaphone shouters, and it was to a concert of this sort that the start was made.

A remarkable piece of work had been performed by the operator of No. 71; the De Dion which broke a piston and was towed in the night before. Word had been telephoned to Boston, and by 11 o'clock a man had reached New Haven with a new piston. It was put in place of the broken one, the car gone over, and bright and early this morning it was in line, right up at the head and ready to start first. The Ward-Leonard, however, which proved to have had trouble with its clutch outside of New Haven, did not put in an appearance.

Consequently only 68 cars faced the starter this morning, and the entire number is in New York to-night. To be sure, some of them made rather inglorious finishes. For example, No. 36, a Locomobile, was pushed in by an outside car from Seventy-fourth street, owing, it was claimed, to getting out of water. The Italian car, No. 49, was stopped just a few blocks from the finish by an overheated engine and had to be towed in. Pushing had to be resorted to in the case of an Elmore, No. 38. It was curious that all these mishaps should occur with the finishing point in sight and the long journey almost over.

It was a day marked by a number of minor troubles also. The run was not a particularly trying one, but a number of otherwise clean scores were marred.

A good crowd turned out at New Haven to witness the departure, and had not the police arrangements been well looked after there would have been trouble in getting clear of the town. At Bridgeport the crowd seemed to be even larger than on the outward journey. For a considerable distance policemen were stationed at every block, directing the cars and keeping the people in check. The Automobile Club of Bridgeport was equally attentive, and did much to facilitate the passage through the town.

At several places along the route, particularly as New York was approached, the arrows had been removed, and it was strange that wrong turns were not taken.

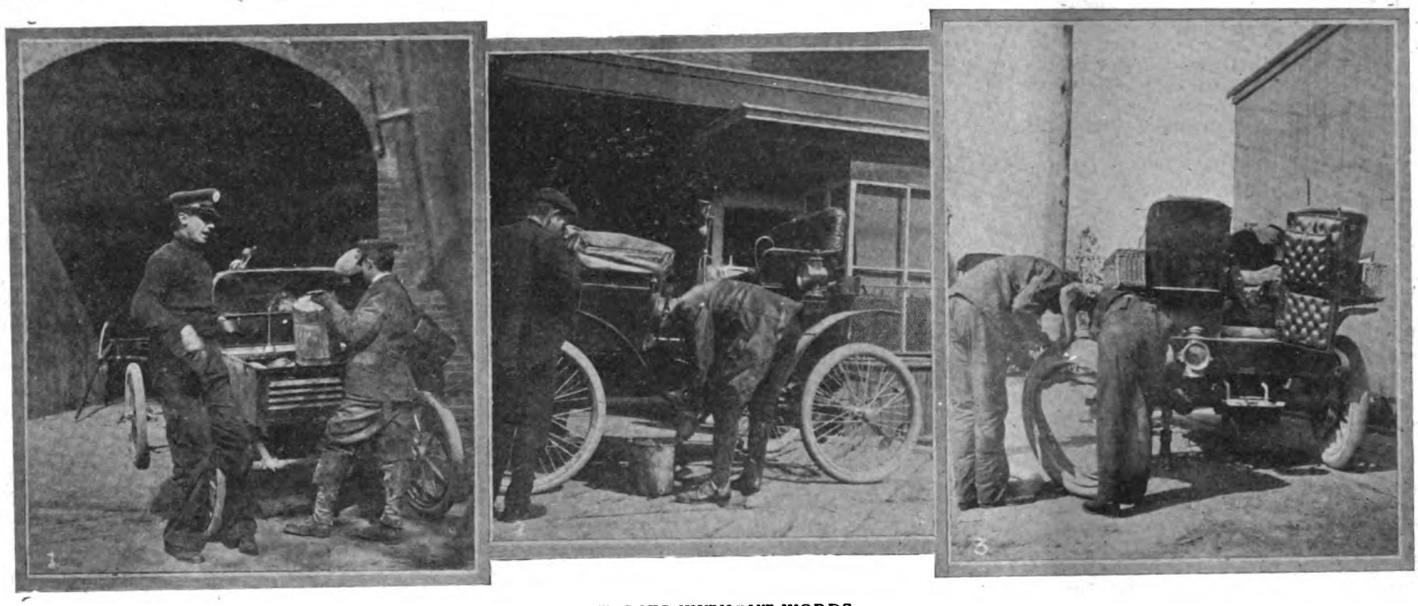
At Norwalk a welcoming delegation had gathered. A. C. Bostwick had driven up in a Pan-American car, which attracted a great deal of attention. George F. Chamberlin, of the contest committee, was also present to greet his colleagues. Harry Fosdick passed through Norwalk en route to New York just before the last stage was entered upon. He had left Boston at 1 o'clock in the morning, and reached New York's outskirts at a few minutes past 4.

The previous night at New Haven the contest committee had met and taken precautions to prevent speeding the next day. It was announced that two pace making cars had been arranged for, and that any car passing the pacemaker would be instantly disqualified. Attention was further called to the resolution passed by the American Automobile Association in May last, providing for the punishment of any one who indulged in speeding in a contest of the sort.

There had been all sorts of rumors afloat about the struggle for first place that was to take place. A dozen or more cars were said to be in readiness to push forward regardless of everything. But the committee's action squelched such plans, if they were really made, and the ride from Norwalk was in a dignified, orderly procession, especially the latter part of it.

A crowd numbering several thousand people had gathered in Fifth avenue, and the cars as they came in were compelled to pass between a living wall.

As they reached the control their time was taken, the books signed and collected and the cars sent around into Fifty-seventh street in a hurry.



STORIES WITHOUT WORDS.

Complaints About Gasolene.

There was, as usual, some complaint of the quality of the gasolene. Whenever an engine or burner got to acting badly, and no other cause could be assigned for it, it was put down to bad gasolene.

As a matter of fact, the Standard Oil Co. looked after this matter very well. There was some complaint that 18 cents a gallon should be charged, but that was the uniform rate all along the route. It appears, too, that this was a special rate, for at Boston the salesman informed the Motor World man that the price was 20 cents to those not in the run.

The Ladies on the Run.

Just five ladies participated in the run. At Hartford a local automobilist, W. C. Russell, in a Stanley surrey, joined the cars, accompanied by his daughter, Miss Russell, and her friend, Miss Corbin. On Thursday Mrs. Riker joined her husband, A. L. Riker, and rode with him throughout the remainder of the trip. This makes five ladies in the party, the others being Mrs. I. W. England, of Passaic, N. J., and her friend, they riding in Mr. England's new Puegeot car.

The ladies all seemed to enter keenly into the spirit of the affair.

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WITH THE FREE LANCES

The men who Accompanied the Reliability Run Without Thought of Rules—Business for Some; Pleasure for Others.

Among the cars that accompanied the party as far as Boston were those of President Shattuck of the A. C. A., and Harry G. Woodworth, of Rochester, N. Y. The former had J. Dunbar Wright and Robert Graves as his guests. Woodworth was accompanied by Frank G. Webb, of the Long Island Automobile Club, who went along at short notice.

"Woodworth persuaded me to start with him and go as far as New Haven," he said to the Motor World man. "I enjoyed myself so much that when I got there I decided to got a little further if everything was all right at the office. Calling it up on the 'phone I found that I could be away Friday, and at Springfield I repeated this and so came on to Boston. But I must go down to-night by train."

On Sunday afternoon about 4 o'clock, when it was still raining a little, Woodworth started to drove down to Providence in order to take the night boat from them to New-York.

A large number of the trade and press interested in the reliability run from New York to Boston and return covered the route by train, meeting the contestants at the noon and night controls. Among the number were W. H. Kirkpatrick, of the Hartford Rubber Works Co.; George H. Lowe, of the White Sewing Machine Co., Boston; James Becker, of the Elmore Mfg. Co., Clyde, O.; H. A. Githens, of the G. & J. Tire Co., Indianapolis, Ind.; W. D. Gash, of the Fournier-Searchmont Automobile Co., Philadelphia, Pa.; Clarence E. Whitney, of the Whitney Mfg. Co., Hartford, Conn.; Harry T. Dunn, of Fisk Rubber Co., Chicopee Falls, Mass.; Wetmore Worthley, of the "New York Evening Telegram"; A. G. Batchelder, "New York Journal"; Al. Reeves, "New York Mail and Express"; J. C. Kerrison, of the "Boston Herald," and a number of representatives of the trade press.

A most enjoyable trip was reported by I. W. England, of Passaic. With the ladies in his party, he remained in Boston until 3 o'clock in the afternoon "doing" the city, and made a fast run to Springfield. He took supper at Worcester, and reached Springfield at 11 o'clock, only to find that the rooms he had engaged at the Cooley House had been let go just a few minutes before, the clerk thinking that he would not get there.

"We have had the finest time imaginable," he said to the Motor World representative. "Starting as a free lance, as we did, we have been able to do as we pleased, and yet everybody has been very kind to us along the route. Had I been entered my run would have been a clean one, for I have not made a stop between controls nor made any repairs beyond replacing a defective sparking plug."

The European tourists, Harry D. Corey and Harry A. Fosdick, the latter the Winton Co.'s manager at the latter place, expected to accompany the party to Boston. But red tape at the custom house made it impossible to get the car out in time, so Mr. Corey went to Boston by rail, while Fosdick waited for the car. He got it on Thursday afternoon, shipped it to New Haven on the boat, and to-day brought a party of newspaper men with him to Springfield.

One of the familiar figures along the road was "Wally" Owen and his Gasmobile. There were many wagers that the twain, with their load of newspaper men, would eventually come to grief during some of their wild dashes, but such predictions turned out to be erroneous. New York was reached with then still intact, and the tauchness of the Marion product was again demonstrated.

Dr. Hovestadt, of Brooklyn, met with hard luck. He went into a sand hole between Worcester and Boston and broke both steering knuckles and had to give up. He met the party on its return to New York.

Although the Pope-Robinson car was scratched, it made the run from New York to Boston, accompanying the party for the greater part of the distance.

Grenville Russell Dead.

F. Grenville Russell, general sales manager of the Automobile Co. of America, Marion, N. J., died at the Post-Graduate Hospital, in New York, on last Wednesday. He was taken to the hospital the week previous, suffering from appendicitis, and successfully underwent an operation, but on last Wednesday a second operation was found necessary, from which he failed to recover.

Mr. Russell had a very large acquaintance in the bicycle and automobile trade, being at one time connected with the sales department of the Pope Mfg. Co., and for five years with the Electric Vehicle Co., of Hartford. For the last eighteen months he had been manager of the sales department of the Automobile Co. of America, and was highly esteemed by the officers of that company. He was to have filled an important position with the new company which is being organized. His death is exceedingly regretted by a large circle of friends. The funeral took place from his home at Hartford, Conn., last Saturday afternoon, and was very largely attended.

The best way for one manufacturer to get ahead of another is for him to advertise oftener and better—and to pay better attention to his business. The whole secret of trade success is encompassed in this bit of advice.

TIRES THAT TROUBLED

But why no one Seems to be able to Say—Punctures are Most Frequent in the Reliability Contest.

Just why there should have been so much trouble with tires on the run is one of those things which no man can find out. A number of theories were advanced bearing on the matter, but proof could not be brought to support them conclusively.

Punctures were the prolific cause of the stops referred to One of the White carriages, for example, replaced five inner tubes during the run. The driver did not think they were punctures, but what they were he could not say. Others again found nails and even screws sticking in their tires. At Boston several of these were picked up in the yard of the garage.

One theory was that the tires heated while running and the inner tube joints were opened in consequence. The Motor World man instituted inquiries regarding this, and found one case where this happened. But no others could be learned of.

But little replacing, outside of inner tubes, was done. Of course, if a puncture or cut occurred the injured tube or tire was replaced at once. Representatives of the tire companies accompanied the party, going from control to control, and looked after the troubles referred to. Some days there would be little or nothing to do; at others casualties came thick and fast.

Many quick roadside repairs were made. New inner tubes were put in in less than half an hour, and in spite of the size of the tires no great amount of difficulty was encountered in doing this work. Lifting jacks were in great demand.

Of the troubles which were so prevalent last year there was scarcely a trace. The fabric did not part from the rubber nor the treads loosen, nor did tires tear off the rims. In short, faults of construction were conspicuous by their absence, if the punctures be consigned to a different category.

English Eyes on Ireland.

Unwilling to relinquish the desire to run the 1903 Bennett Cup race in the United Kingdom, British automobilists are still turning to Ireland as the only possible country in which it could take place.

One the one side is the fact that there is no legal speed limit in the land of the shamrock, while against this may be put the lack of the kind of roads desired. So far the Automobile Club has not reached any decision on the subject, though in letters in its possession, written by gentlemen holding important official positions, it is stated that special efforts will be made in certain districts to improve the road surfaces should the committee in charge of the race arrangements decide to contest for the cup in Ireland.

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AGAIN THE

HAYNES-APPERSON

MAKES A

PERFECT RECORD

In the New York-Boston-New York Run, and Qualifies for the

PRESIDENT'S CUP.

The nine-horse power HAYNES-APPERSONS last year in the New York-Buffalo run beat ALL MAKES, American and foreign, many of double their horse power; winning HIGHEST HONORS of ALL. This is the reason:— the HAYNES-APPERSON is the ONLY AUTOMOBILE that has been consistently developed through 10 years of successful experience on American roads. The same development that has given foreign cars their reputation has given the HAYNES-APPERSON its proved reliability, but because of the more severe conditions in this country there is no car of equal horse-power that will last as long, handle as easily and ride as smoothly on American Highways as this American product.

Runabout,	**7**	**horse-power,**	**2**	**passengers**	**$1200**
Phaeton,	**12**	**"**	**2**	**"**	**1500**
Surrey,	**12**	**"**	**4**	**"**	**1800**

A FEW CARS FOR IMMEDIATE DELIVERY. ASK OUR CUSTOMERS. GET OUR BOOKLETS.

HAYNES-APPERSON CO., Kokomo, Ind.

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Commentary

Now is the time when the really wise man makes up his mind just what kind of a vehicle he wants and places his order for it with the manufacturer of his choice. Unfortunately, wise men are no more plentiful among automobile purchasers than elsewhere, and so the average man puts off ordering a vehicle until the arrival of some nice warm day in the early spring tempts him to the road. The next day the tempted one strolls in to the agency of his chosen vehicle and tells the smiling salesman that he wants such and such a kind of automobile then and there. What the salesman tells him matters not, save that it is more in the promising line than it is in the providing one, and forthwith there is woe and lamentation in the house of the would-be buyer. Until the world is made over, however, the procrastinators will continue to be in a large majority, and the automobile maker will not be alone in his regret that the day of making over seems yet far off.

* * *

"Old Moore," who in Europe enjoys an extremely profitable reputation as a reader of the stars, has issued his annual proclamation telling the world what it is to expect during the year 1903. Two months are named as being of extreme promise to those who are interested in the art and science of locomotion. According to "Moore," "aerial automobiles will be the surprise of the world in March," while "road locomotion will make vast strides in May." Thus the three M's, Moore, March and May, may play very important parts in automobiling, if "Old Moore" has not read the stories of the stars incorrectly.

* * *

It takes a lawyer to show just how many twists can be given to the English language. Recently a New York lawyer was arrested down on Long Island and haled before a Patchogue justice, and there charged with the high crime and misdemeanor of propelling an automobile over the public highway at a speed faster than the local constable thought was legal. At first the accused attempted to convince the judge that he was not proceeding faster than the eight miles an hour allowed by the law. The constable put in the usual forty miles an hour per Waterbury timing allegement, whereupon the lawyer asserted that even if he was going at that speed at the moment of his arrest he still could not be held under the law. He claimed that the law permitted him to make eight miles within an hour, thus allowing him to proceed at any speed he pleased, provided at the end of an hour's travel he had not driven the vehicle more than eight miles. The Patchogue judge seemingly had a different idea, since he fined the automobilist $20, and told him if he thought the Patchogue interpretation of the law was wrong he had the higher courts to appeal to. I imagine there won't be any appeal, though, on any such grounds as these.

* * *

Alderman Lumpkin, whose name and office are certain indications of his intelligence and his intolerance, in a recent speech before his colleagues declared himself to be "in favor of declaring automobiles a public nuisance and refusing them the privilege of the streets of Kansas City. Upon some of the poor, misguided citizens whose misfortune it is not only to be governed by gentlemen of the Lumpkin stripe, but also to own automobiles, attempting to defend themselves and their possessions against Lumpkin law and logic, the learned legislator replying to their offer to devote a certain portion of their time each day to breaking horses to the sight and sound of an automobile, promptly said:

"What tommy-rot that invitation of you automobile owners is of inviting owners of valuable horses and conveyances to meet you with their horses and vehicles on one of the boulevards to become used to the automobile. Why that is a direct invitation to a man to come out and imperil his life and his horse. If it was left to me I would not allow automobiles on the boulevards at all."

Of course, with the honorable Mr. Lumpkin possessed of such ideas and prompt to express them, there was nothing left for the humble citizens but to lowly bow and silently withdraw crushed to the dust by the hauteur and the homage of Alderman Lumpkin, be gosh!

* * *

It has come at last. I just knew it would. The automobile is now the wrecker of family happiness. According to the story which I find repeated in many veracious papers, the wife of a Chicago physician who is both wealthy and a vocalist, has taken her woes to the divorce court. Sad it is to relate that neither her musical charms nor the soothing influences of her money prevented a brass trimmed, red automobile from becoming her rival. "He neglected me," sighs the deserted wife, as she relates in her bill of particulars how her husband rode away from her side and left her all forlorn, to weep tears of loneliness while he chug-chugged over many miles of dusty roads. Every one who reads the papers has long since been taught by the editors thereof that the automobile is the Juggernaut brought up to date, although, in its case, its hundreds of alleged victims do not make willing sacrifices of themselves. Any and all of the editors will tell you, in fact, they have repeatedly told you, that the automobile is synonymous for all that is reckless and uncontrollable, that is nerve racking, law defying and the one thing in all creation which is without a single redeeming feature.

Now that the vehicle appears in the role of the destroyer of family bliss, the catalogue of its crimes is complete. Nor can it be argued that it is blameless, being mechanical and irresponsible. It is a witch, a Frankenstein on four wheels. Any editor of a cross roads paper who never saw an automobile will tell you as much and more.

* * *

Among the many things which are beyond my comprehension is the case of the ancient individual who had no difficulty whatever in swallowing a camel, but, try as he would, absolutely could not encompass a gnat without the most heart rending straining. For some, and I suppose excellent, reason, neither the name nor the profession of this unfortunate swallower has ever been made public, but I am inclined to believe that some way or another he must have been connected either with a dime museum or a side show—institutions which show a great interest in those whose physical make-ups in any way border on the abnormal. If the late lamented camel-gnat swallower left any lineal descendants I know where they are right at this moment. They are all members of the London Local Government Board, which has been investigating the terrible damages done to British highways by the rubber tired motor vehicle. Oh, Lord!

* * *

One of those Western geniuses whose inventions occupy a more prominent position in the Patent Gazette than they ever do anywhere else, has invented a sail which he says can be attached to an automobile in such a manner as to allow of the vehicle running before the wind at the rate of fifteen miles an hour without employing an ounce of power other than that afforded by the sail. I can see a great future for that sail—if. All that is now needed is an invention which will make the wind occasionally blow in the direction which a person wants to go. It never does, you know!

* * *

When Stephenson desired to introduce the steam engine in England the Crown of England, through its astute and learned representatives, warned the people in a public edict "That inasmuch as certain persons have seen fit to impose upon our people strange and extraordinary proposals to engage in a business, on a let line of iron rails, so managed as to carry passengers and freight from point of departure to destination with safety, at a rate of twelve miles an hour, all things consigned to them, we think that cannot be done, and warn our countrymen against the insidious advances of plausible argumenters who will endeavor to beguile them into subscribing for shares in said company." The descendants of the author of this proclamation emigrated to America, where they increased and multiplied, until to-day there are enough of them to supply at least one member to every town council in the country, where he promptly introduces a fool ordinance aimed at the automobile.

THE COMMENTATOR.

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It requires confidence to start but **ONE** car in an open contest.

THERE WAS BUT

ONE PRESCOTT

IN THE

RELIABILITY RUN

AND IT

FINISHED WITH A PERFECT SCORE.



FOR FOUR PASSENGERS—FRONT OPEN.

Of course, we knew the PRESCOTT—knew what it has done and can do. We knew it so well that we could afford to risk its reputation with one car. Others dare not take such chances.

The PRESCOTT in the run was a regular stock car. It went through without hitch, skip or stop. Not a nut or bolt started. Not a tire punctured—they were Fisk tires.

The same steam car won certificates in Long Island and Automobile Club of America Endurance Runs. Has been driven over 6,000 miles this season—on one tour of New England it covered 2023 miles in sixteen days.

ALL PRESCOTTS ARE AS GOOD AS THE ONE USED IN THE RUN.

PRESCOTT AUTOMOBILE MFG. COMPANY, - 83 Chambers Street, New York City.

THE FOSTER A WINNER.

Will your purchase of an automobile be influenced by the "hot air" of the maker or by the results of practical and conclusive tests?

No buyer can afford to disregard the following facts:

In the great Reliability Run from New York to Boston and return held during the second week in October, the Foster Automobile made a record which in some respects was superior to that of any other machine.

The Foster finished in the leading bunch and was one of the twenty vehicles that made a clean score for the entire run.

The machine used was the same one that had previously made a successful run from Buffalo to New York City.

Of the vehicles which started, 55 were gasolene and 19 steam. Yet of those that finished with clean scores, 10 were steam and 10 gasolene; 45 gasolene machines went wrong to only 9 steam machines.

This record conclusively demonstrates the superiority of steam power and the desirability of the Foster carriage.

Catalogue on request.

FOSTER AUTOMOBILE MANUFACTURING COMPANY, Rochester, N. Y.

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L. A. W. ASSININITY

Circulating Petitions Favoring an Illegal Law—One Official's Odd Admissions.

The New York Division of the League of American Wheelmen, or, more correctly, certain officials thereof, have "broke loose" again. Their re-election is being strenuously opposed, and their sudden and pernicious activity may be attributed to one of two causes: a desire to create campaign thunder or to personal and official ignorance.

The officials' latest outbreak takes the form of petitions and circular letters urging the enactment of the ordinance proposed by themselves and which seeks to have automobilists of this city examined and licensed and hedged in generally. The fact that the Doughty bill expressly forbids local ordinances of the sort has no effect on the brilliant individuals who are behind the movement. They maintain that the aldermen "have an undoubted right to enact it." That a few automobilists have favored a system of State license is unction to their souls, for, after remarking the "daily list of appalling accidents" and telling wheelmen how very much they are afraid of motor vehicles, the circular letter remarks the fact but is fearful that the automobilists, "who are well supplied with money," may, "if they defeat the local ordinance, change front at Albany and oppose any measure that may be introduced there"—a gentle intimation that the aldermen are bribe-takers and that the automobilists may resort to bribery.

The letter bears the signature of John F. Clark, secretary-treasurer. Mr. Clark, however, is firing balls that are prepared by others, who are merely "using" him for their own ends. He is a kindly, white haired old gentleman, who does not appear capable of the bombastic exaggeration and vindictive folly which he is made to shoulder. When a Motor World man interviewed him on the subject he first attempted evasive replies, and finally admitted that he had nothing to do with the matter. His name was used because it was convenient.

Asked if he had heard of the Doughty law, Mr. Clark admitted that he "had heard something about it." When its exact language was quoted and he was asked how he reconciled it with his statement that the aldermen have the undoubted right to pass a licensing ordinance, Mr. Clark laughed uneasily and replied:

"I don't attempt to reconcile anything."

Asked if he had any facts or figures to prove an appalling list of accidents, he responded in the negative. When the Motor World's statistics were quoted he was genuinely surprised and proceeded to tell a story of a bicycle accident in which he had come out on top. Asked if the bicycle was not once the red devil and mankiller of the sensational press, he admitted it frankly, and when the pressure became too strong he finally said:

"Well, I don't know much about any of the laws and I did not compose that letter. I merely signed it when it was brought to me. If you want to know any more about it you'll have to see the men that wrote it."

Automobile With Rapid Fire Gun.

Major P. R. Davidson, of the Indiana State Militia, and two cadets of the Northwestern Military Academy are on their way from Indianapolis to Washington in an automobile with a rapid-fire gun mounted on the front end. Major Davidson devised the machine, which was built at the academy. It weighs 2,600 pounds, is 12-horse power, and the motive power is steam. It is geared to run from 35 to 38 miles an hour.

Major Davidson is reported in an interview as saying: "I think that it would be a good thing for mobs or disturbances in cities where there are paved streets, but it can never take the place of field artillery with horses. Turn any sort of an automobile loose in a street, and a mob would break quicker than they would for horses, and another advantage of the machine is that it can be fired with equal facility while advancing or retreating."

Eddy Penetrates Canada.

That veteran tourist, Arthur J. Eddy, ex-president of the Chicago Automobile Club, has just completed a 1,000 mile trip through Lower Canada, on which he was accompanied by Mrs. Eddy. They penetrated many portions of French Canada far removed from the usual routes of travel, where the inhabitants were in almost total ignorance of the existence of such a vehicle as an automobile.

Including various detours, the distance covered in the journey was something more than 1,000 miles, and, in spite of wretched roads, steep hills and deep morasses, not a breakdown occurred serious enough materially to delay the trip.

Corey Covers 1800 Miles in Europe.

H. D. Corey and Harry A. Fosdick, of Boston, Mass., the latter manager of the Winton branch in that city, arrived in New York from a European trip last Wednesday. While in Europe they travelled over 1,800 miles in their Winton touring car, and all the troubles they experienced were two tire punctures. It was the intention of Messrs. Corey and Fosdick to go to Boston with the reliability run, starting on Thursday morning, but owing to the red tape existing in the New York Custom House they were unable to secure their machines until Friday, when Mr. Fosdick joined the run at New Haven.

QUEER QUAKERS

They Draft an Ordinance Placing Themselves in the Hands of Their Enemies.

If, henceforth, Philadelphia people take stock in the sensational stories regarding the heniousness of the automobile they will have some ground for it. Thanks to a committee of the Automobile Club of Philadelphia, substantial color was last week given that too-popular notion. They performed the doubtful service at the joint conference held with a view of drafting an ordinance satisfactory to all vehicular interests and for submission to the City Council.

Henry G. Morris and Captain John S. Muckle represented the Automobile Club and C. T. Harrop and J. Frederick Hartman the Century Wheelmen. Invitations had also been sent to the Pennsylvania Railroad, the Philadelphia and Reading Railway and the Philadelphia Rapid Transit Company to send representatives, but none was present from these companies.

The ordinance was presented by Captain Muckle. It fixes the maximum speed for vehicles at ten miles an hour within the city limits. In the matter of penalties for violation of regulations the fine for automobiles is made $25 for the first offence and revocation of license for the second. Violators in other vehicles were, however, considered of small moment, and may break the law an indefinite number of times at the relatively small cost of $5 for the first offence, $10 for the second and $25 for the third.

Talking of a Private Road.

Another private automobile road on Long Island is talked of. A number of prominent and wealthy summer residents talk of building a private automobile road from Smithtown to Ronkonkoma. This would connect the north shore with the central section of Long Island, and if the proposed road from Oakdale to Ronkonkoma is constructed it would make cross island travelling for those machines an easy matter. The report is secure a strip of land sixty feet wide, and that the road will be so protected that high speed will be possible for the entire length.

Marconi at Work on a Car.

Not content with equipping an automobile with his wireless telegraph apparatus, Marconi is at work on a car of his own design. Advices from Rome are to this effect. The vehicle will, it is stated, have a speed of 58 miles an hour.

The motive power comes from four dry batteries arranged in the form of a circle, and divided into four sections. A crank sets the batteries into action simultaneously. The batteries and accumulators guarantee a run of 560 miles.

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...THE...

RED, WHITE and BLUE

GROUT

Steam Cars

were in the lead throughout the RELIABILITY RUN from New York to Boston and return.

NOTE THE PERCENTAGE OF STEAM VEHICLES IN THE NON-STOP WINNERS.

19 Started; 18 Finished.

THE GROUTS ARE BLUE RIBBON WINNERS.

Two vehicles went the entire distance without a stop of any kind. One with only a five minutes' delay, to adjust water glass.

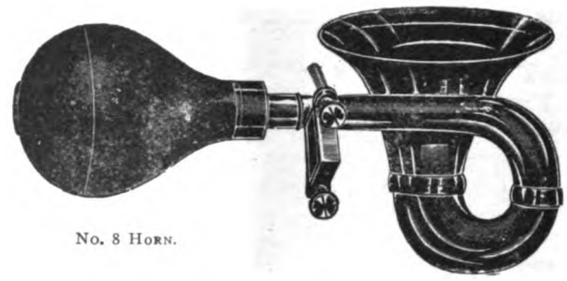
WATCH FOR THE OFFICIAL RECORDS.

The 1903 Grout Tonneaus and Two-Seated Touring Cars ready.

WE ARE READY TO APPOINT AGENTS IN UNOCCUPIED TERRITORY FOR 1903.

GROUT BROS., Orange, Mass.

THE FRENCH HORNS ARE THE FINEST IN THE WORLD.



No. 8 Horn.

We are importing the largest assortment and most complete line of **FRENCH HORNS** coming to this country. **No. 8** is the most popular style, with opening pointing at right angle from the bulb.

We have in stock the following sizes, in addition to list given in our Catalog.

LIST PRICES.

Number.	Total Length.	Diam. of Bell.	Metal.	Price.
8	8½	3¼	Nickel	$4.00
9	10	3½	"	4.80
10	11	4	"	5.20
11	12	5	"	6.50
13	12	5½	"	7.50

The following are straight style, the opening pointing forward from bulb.

Number.	Total Length.	Diam. of Bell.	Metal.	Price.
12	13	5	Brass	$6.40
14	14	5½	"	7.60
1	8	2¾	Nickel	2.75
1½	9	3⅛	"	3.00
2	10	3½	"	3.40
2½	10½	3⅞	"	3.75
3	11½	4½	"	4.40
4	12¼	5⅛	"	5.60
5	13½	5¾	"	7.00

Any of the above Horns, fitted with 4 feet Flexible Metallic Tubing, $4.00 extra. No. 4, 12¼ total length, 5⅛ diameter of bell, with 3¼ feet Flexible Metallic Tubing and Screen attached, $12.50. **Brass or Nickel.**

Any of the above Horns delivered to any part of the United States, charges prepaid, 25 cents extra.

Discount to the Trade. *Catalog on Request.*

THE LARGEST AUTOMOBILE SUPPLY HOUSE IN AMERICA.

CHAS. E. MILLER, MANUFACTURER, JOBBER, IMPORTER and EXPORTER

97, 99, 101 READE ST., NEW YORK CITY.

You Cannot Get More for Your Money

than by using $2.00 of it to subscribe to

The Motor World

In which each week appears a record of all that is best, brightest and newest in the world of mechanical traffic.

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TWO RUNAWAYS

In New Jersey the Automobilist is Sued; in Connecticut the Township—Points Involved.

In the case of Joseph M. Hughes against Felix Warburg, reported last week in the Motor World, in which the plaintiff was awarded damages in the amount of $12,070 in the United States Circuit Court at Trenton, N. J., September 7, there is naturally so great an interest that the following charge to the jury by Judge Andrew Kirkpatrick is worthy attention:

"This action is one of law to recover damages for negligence, which negligence was approximately the cause of the damage sustained. There must be a connection of the negligent act and the cause of the negligence. It is not negligent to run an automobile on the public highways. The highways are for the common use for every one, whether a carriage, horse, automobile, wagon or what not. Each must use it with care. One may not want to wantonly commit a careless act on the highway; he would not use firearms for fear of hitting someone. The amount of care should be reasonable. He should use whatever care he can. If he should neglect to use it then he must answer. If the defendant's man used it the jury should deliberate on the testimony to that effect.

"The testimony shows that the plaintiff's horses were standing still when the defendant's machine, operated by his servant, came into Ocean avenue, 335 feet from the horses. There is a dispute as to the speed of the automobile. Some say that it was going fast and others say that it was slowing down whn in sight of the horses. This will be determined by the members of the jury.

"In the testimony of the chauffeur he says that he was slowing down and going to stop at a bicycle repair shop some eighty feet farther down the road from where Mr. Hughes and his horses were standing. Mr. Sparrow says that they noticed the frightened condition of the horses and signalled Mr. Martin, the chauffeur, to stop his machine.

"It is the duty of an operator of a machine to operate it so as to not cause fright in ordinary gentle horses, and so operate it that other horses will not receive injury.

"It was Martin's duty to look out on the highway. If you believe that warnings were given and Martin ought to have seen them it is your duty to determine negligence. If in your idea Chauffeur Martin used proper care then your verdict should be for the defendant.

"The defendant claims that the accident was not caused by Martin and the automobile, but the accident was due to a defective strap on the pole. On the part of the defence four witnesses have testified to the neck yoke and say that it was bad, while on the other hand Gordon B. Hughes testified that the strain was put upon it by the horses running away.

"If the testimony shows a want of care exercised by Chauffeur Martin and his failure to avoid the accident, then the verdict should be given to the plaintiff.

"The next question is the amount of damages the plaintiff can claim. Several elements enter into the case, and are: The amount actually expended for medical services rendered at the time of the accident, to the horses and to himself, and since.

"The plaintiff is entitled to damages, if any, to the loss sustained by reason of the accident, that is to say, the horse whose hind leg was broken and had to be shot, making a total loss. He is entitled to recover the market value of the horse, not at what he values the horse.

"He is also entitled to damages sustained to the harness, alto to the remaining horse, and its value after the runaway, and the difference in value as one of a team.

"The earning power of the plaintiff should be considered—if he is incapacitated from doing business he is accustomed to. The loss of earning power is determined in various ways. It is determined the same as when a man who is accustomed to do laboring work loses his right arm and is entitled to compensation.

"You must consider the earning power since the accident and the earning power in the future for the work he has been accustomed to doing. He is not entitled to any capitalized sum of money, but he is entitled to such compensation as is in your best judgment compensatory for the loss of earning power, of which I have spoken.

"The plaintiff is entitled to damages, if any, for mental and physical pain caused by the injury. There was no standard of value of damages for physical pain and suffering in the future. The amount in your judgment should be such as the evidence warrants."

On the other hand, as a part of the suits and counter suits anent the automobile, the following suit, to be argued in the Supreme Court of Connecticut, will be closely watched, as it brings into the subject the liabilities of towns for contributory negligence in the matter of runaways alleged to be caused by automobiles.

The case in point is that of Charles H. Upton, administrator of the estate of Mary B. Upton, against the town of Windham. Mrs. Upton was driving with her husband along a highway in the town of Windham. Their horse took fright at an automobile and ran away. The horse went down an embankment and Mrs. Upton was thrown from the carriage and killed, after the horse had run some distance from the roadway.

Suit was brought against the town, and Judge Gager, before whom the case was tried in New Haven, gave judgment against the town for $1,500. The lawyers on the part of the defendant asked Judge Gager to find that the defect in the highway, through the lack of a railing, was not the proximate cause of the injury to Mrs. Upton. Judge Gager refused so to find and he refused to find as otherwise requested. The lawyers for the town appealed from Judge Gager's decision. They claim errors as follows:

1. That as against the said deceased, Mrs. Upton, under the fact found, the town was not liable for not placing a railing upon the side of the highway at the place where the horse left it.

2. That the town, by law, was not bound to erect a railing to prevent runaway horses from going off the highway.

3. That the town was not bound to anticipate and guard against such an occurrence as is stated in the finding.

4. That, even if the highway, at the place where the horse left the highway, was defective for want of a railing as to persons using the highway in the usual manner, the town is not liable for the occurrence arising from the horse's being frightened and running away, as is stated in the finding.

5. That if the injury from which the deceased died was caused by the horses's turning suddenly after it had left the highway, in the adjoining field, and thereby overturning the carriage and throwing the deceased upon the ground, the injury was not caused by the defect in the highway.

6. The defect in the highway of the want of a railing was not the proximate cause of the injury of the deceased, Mrs. Upton.

7. That even if a railing, sufficient to protect ordinary travel, was required at the place of the occurrence, yet, if such a railing would not have prevented a frightened horse from going down from the highway into the adjoining field, the town was not liable in this case.

8. That even if a railing sufficient to protect ordinary travel was required at such a place, and the highway was defective for want of such railing, as against ordinary travellers, the town was not liable in this case, as the occurrence by which the plaintiff's intestate was injured was not received in the usual common use of a highway, but was an extraordinary occurrence.

9. That upon the facts judgment should have been rendered for the plaintiff for nominal damages only.

Orient Enlargement.

The remarkable success that has attended the Orient interests this year has had its natural result. The demand for additional factory facilities has led to the placing of a contract for the erection of another wing, 120 by 40 feet, to the plant at Waltham. At present the offices and assembling and shipping rooms are located in the factory building. When completed they will be removed to the new addition, thus affording room for more men and machines in the factory proper.

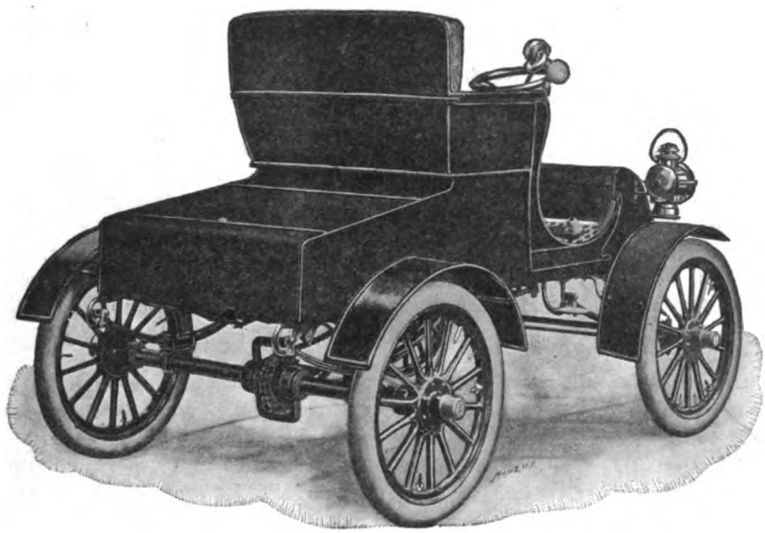
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CLEVELAND'S LATEST

That City of Automobiles Produces Another Car—Some of it Chief Features.

From that home of gasolene vehicle manufacture, Cleveland, hails the American Runabout made by the American Motor Carriage Co., of 514 East Prospect street, and shown herewith in three-quarter rear view.

The American weighs one thousand pounds, has a low center of gravity and a long wheel base. The frame is constructed of angle iron, is well braced and light in weight. Both front and rear axles are of American Ball-Bearing Co. make, equipped



with wooden artillery wheels and 3"x30" detachable tires. The seat is divided, heavily padded and covered with black hand-buffed leather.

The engine is of the four cycle, single cylinder type, water cooled, with ample bearing surfaces, and is claimed to be 5.1 h. p. brake test. The water circulation is by means of a gear pump, keyed direct to the end of the crank shaft and hung on a bracket attached to the side of the crank pit. The water tank is located in the front hood and has a capacity of five gallons, while an efficient coil of brass tubing is hung beneath, keeping the water at the required temperature.

A float feed vaporizer is located in a convenient position and protected from dust. It is supplied from a tank carrying seven gallons, is located near the cylinder, obviating the necessity of long connections and the danger of leaks. The entire lubrication is effected by gravity feed from one tank, and is turned on and off by the same lever that operates the electric switch. The crank pin and transmission are oiled through the center of the crank shaft.

Jump spark ignition is used, with all contact points enclosed in a dust-proof case and so arranged as to insure a square and firm contact, while especial attention is given to the system of wiring. All wires have heavy rubber insulation and are finished off with stamped copper terminals. The current is supplied by one of two sets of dry batteries; the other is used as a reserve. The muffler is of ample proportions to effectively deaden the exhaust and to prevent back pressure.

The transmission, an embodiment of the planetory system, gives two speeds forward and one reverse. With the aid of the engine throttle, it gives an ideal control. A one-inch roller chain drives direct to the rear axle, and is adjusted by means of a pair of sliding spring blocks. A double-acting brake is located on the drum of the compensating gear and can be locked in any position by means of a ratchet.

The steering gear, operated by a large wooden-rimmed wheel, contains a system of gears to overcome the jar of the road, while the front wheels are slightly pitched inward, after the manner of the most modern power road vehicles. The steering post contains a knuckle joint, making it possible to throw the hand-wheel out of the way while entering or leaving the seat.

The Week's Exports.

British East India.—3 cases auto vehicles and parts, $1,022.

Havre.—16 cases motors, $800.

Liverpool.—4 cases auto vehicles and parts, $1,470.

London.—10 cases auto vehicle parts, $1,426.

Mexico.—3 cases auto vehicles and materials, $890.

British East Indies.—1 case auto vehicle, $800.

Copenhagen.—3 cases auto vehicles and material, $1,150.

London.—3 cases auto vehicles, $400.

Mexico.—6 cases auto vehicle material, $1,248.

OPERATORS BLAMED

Famous Tire Maker Charges Them With Many Tire Troubles and Cites Instances.

The Michelin Co., in one of their recent articles on pneumatic tires, remark that if they had to make a list of the enemies of the motor car driver they would without hesitation put the driver himself at the top. This is to a great extent true, one of the most frequent causes of damage to pneumatics being insufficient inflation. In the Michelin handbook there is a table of pressures to which various tires should be inflated.

Not only must tires be pumped up properly, but the fixing bolts must also be well screwed up. Should they be slack the cover tends to move in the rim and the thickened edge gets damaged. At high speeds the cover turns bodily in the rim and this invariably tears the valve out of the tube. Moreover, if the tire is not sufficiently inflated, and the bolts screwed well up, water is sure to get in, and then the cover lasts a very short time. As for the bolts themselves, care should be taken that the canvas covering is always intact, otherwise damage to the air tube will result. For the same reason bent bolts should never be used, as they do not seat properly.

One very often hears people say that they can "get home" with a deflated tire. This is most unfair to the tire. In case of puncture, unless the sacrifice of a cover and tube is of small moment, the tube should be changed at once. Even in a short distance the cover is generally much damaged, and the valve pulled out of the tube. If it is decided to go on at all costs, the inner tube should be removed, the fixing bolt screwed firmly up, and the cover fastened with leather straps. If these are not obtainable rope will do, but it will not last so long. After running on a deflated tire the rim should be carefully examined to see if it is dented. This often occurs, and the edge of a new cover is with difficulty inserted in the recess. It can, of course, be forced in, but the rim afterward invariably cuts the cover.

Recent Incorporations.

Stamford, Conn.—H. A. Tuttle Mfg. Co., with $100,000 capital, to manufacture and deal in motors, engines, etc.

New York, N. Y.—Columbia Lubricant Co., with $100,000 capital. Directors, G. K. Bell, G. E. Macoy and E. M. Strong.

New York, N. Y.—American Automobile Storage Co., with $5,000 capital. Directors, W. T. Rainey, R. A. Rainey and R. M. Owen.

Binghamton, N. Y.—Safety Sectional Pneumatic Tire Co., with $500,000 capital. Directors, E. C. Inderlied, O. S. Heller and B. A. Beaumann.

Augusta, Me.—American Automobile Co., with $500,000 capital. Incorporators, F. L. Dutton and E. F. Whittum.

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EXPECTED TOO MUCH

He Wanted a Plug to Work Without Care no Matter the Price.

"Have you got a good sparking plug?" was the question asked of the salesman in an uptown store, and the doubting way in which it was asked led the Motor World man to await the reply.

"Of course we have," was the quick reply, as the salesman laid a few plugs on the counter. "Here's the Blank and the So-anso and——"

"Yes, I've tried all them," the customer remarked without ceremony, "but I want something that is good. I am willing to pay any price for it if only it will do the work."

"Why, yes, here is just the plug you want," the salesman replied, seeing the direction from which the wind blew. "It's more expensive than the ordinary plug, but then it is worth the difference. It is guaranteed not to crack or become clogged with soot or to give trouble in any other way. I think you will find it all right," and he wrapped it up and took the money that was handed him.

After the door closed behind the purchaser the salesman looked at the Motor World man.

"Now I suppose he is satisfied, and will stay so until he uses the plug. The trouble with him is that he expects too much of things. If he uses the plug until it gets so dirty that it won't spark, it is the latter that is to blame, not himself. The plug should not need cleaning, not even if he uses too much oil and it splashes on the plug, or the combustion is imperfect and soot clogs the plug. He wants something that will rise superior to such trifles."

Aspire to be Chauffeurs.

Undeniable as is the present shortage of competent chauffeurs and mecanicians, it is almost equally certain that within a few years the trouble will be obviated. The interest taken in automobiles is great, and the desire to learn all about them keen. Boys and young men especially are hot on the scent, and leave no stone unturned to familiarize themselves with the motor vehicles.

"Having occasion to find a lad, with a good mechanical knowledge, able to take care of two cars and willing to make himself generally useful, I advertised for such a person," says an English automobilist. "To my surprise I received sixty-eight applications. A large proportion of the applicants had not sufficient experience, it is true, and were willing to come at any wage I liked to name, if only to get a start; but many others appeared capable of fulfilling the necessary conditions.

"In their eagerness to obtain a comfortable and permanent home some of them even sent photographs for my inspection, and inclosed stamped envelopes to insure a reply. The difficulty was to make a selection.

"One fact stood out prominently in my mind. Automobilism has evidently taken a firm hold on the community at large, and sharp lads in every town, who have been accustomed to cycle work or to machinery, now aspire to become chauffeurs. Already there are numbers of embryo mechanicians in existence, and, two or three years hence, I venture to prophesy that the supply will equal the demand."

Built for Many Uses.

While primarily intended for the departmental work of inspectors, superintendents, fire and police officials, the vehicle herewith illustrated, made by the Electric Vehicle Co., of Hartford, Conn., is nevertheless adapted for a wide variety of uses and special requirements. The vehicle is known as the new special service wagon. Several of these



vehicles were recently purchased by the New York Edison Company for its inspectors.

The running gear, control and steering are similar to those of the Columbia electric tonneau. The extension back has a large closed c mpartment, opening from the rear, which may be utilized for tools or luggage of any description. The top affords complete protection in stormy weather.

Gives Trouble to All.

The British law fixing the maximum speed of automobiles at 12 miles an hour continues to make trouble for all sorts of people, eminent and otherwise. From noble lords down to plain commoners, including even a prime minister, the list of lawbreakers runs. Last week Generals Corbin and Wood, who are returning to this country after witnessing the German army manœuvres, were added to the number.

On Saturday General Young, in company with John W. Gates, was driving through Windsor when a policeman arrested the chauffeur and took the names and addresses of Mr. Gates and General Young, who were the occupants of the car. Sunday the same party, with General Corbin, was nearing Brighton when a policeman stepped out of a hedge and stopped the car.

When the cases were called up no defence will be made, for, as one of the Americans said, "The police have got you at their mercy. You may be morally sure you were not driving at over the speed limit, but that is ineffective against the police, with their stop watches."

GERMAN ADAPTATIONS

Many Novelties Heralded as From France Claimed as Imitations.

"It would probably surprise you to know that one-half, or nearly one-half, the automobile accessories that come from France to this country, heralded as the latest Parisian productions, are really made in Germany," remarked a well known accessory and parts man to the Motor World representative.

"Such is the case, however. They come to us as French goods, of course," he continued. "But when they are traced to their source the latter is found to be the land of the Kaiser. The Germans are an imitative lot, and there is hardly anything they cannot make. They go at it in their slow, plodding way, but they manage to get hold of a considerable portion of the trade whenever they set themselves to the task."

"It is astonishing what a lot of accessories are bought in the course of a season. One is sometimes compelled to wonder where all the automobilists come from, and to conclude that there are two or three chauffeurs, mecaniciens, etc., for every motor vehicle in existence," said a salesman in a prominent Boston store to a Motor World man a short time ago.

"We keep one of our windows full of such goods. Caps, gloves, goggles and other articles of apparel, together with sparking plugs, pumps, lifting jacks and everything required by the automobilist or his vehicle, are sold in large quantities. We get fairly good prices for most of the stuff, but no one seems to mind that or to think that we are asking too much. They seem to want the goods, and by making a determined push for the class of trade referred to we have managed to secure our full share of it."

Origin of Petrol.

It will undoubtedly be a matter of news to those who read English motoring papers to learn that the word "petrol," which they invariably use as we do the word gasolene, properly describes a proprietary article, and, strictly speaking, should only be applied to a spirit vended by the proprietors of the article. The word used abroad as a noun signifies a light, colorless liquid, obtained by the distillation of petroleum, and forms one of the series of hydrocarbons.

As a proprietary article it is manufactured solely by the firm of Carles, Capel & Leonard, Hackney Wick, London. This firm was requested in the early days of motoring by the Daimler Co., of Coventry, England, to distil a spirit suitable for their motors, and, having done so, they christened the spirit "Petrol," up to then an unknown word. The distillation was so successful and the name so appropriate that it has since come into general use in the land of its origin. At 68 Fahr. the specific gravity of fresh petrol is .676.

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THE CASUALTIES OF THE WEEK

RAILROADS {Killed, 141. Injured, 129. **TROLLEYS** {Killed, 19. Injured, 79. **HORSES** {Killed, 11. Injured, 57. **BICYCLES** {Killed, 1. Injured, 10. **AUTOMOBILES** {Killed, 0. Injured, 2.

TOTAL, THIS WEEK: KILLED, 172; INJURED, 277. TOTAL, THREE WEEKS: KILLED, 252; INJURED, 470.

PRIOR TO OCTOBER 6.

Buffalo, N. Y.—George Hall, fell from wagon; died from injuries.
Buffalo, N. Y.—Burton J. Bixby; seriously hurt in runaway
Savanna, Ill.—J. C. Tufts; fell from train; instantly killed.
St. Paul, Minn.—Frank Hockle; thrown from wagon by collision with car; severely hurt.
Fargo, N. D.—James Kennedy; killed by train.
Mankato, Minn.—John Imbole; killed by train.
Fond du Lac, Wis.—Stephen Mullen; killed in coupling cars.
Kalamazoo, Mich.—Mrs. Martin Vanderberg, seriously injured by train.
Bay City, Mich.—Mrs. Edward Robinson; killed by train.
Chicago, Ill.—Morton Frank, driver of express wagon, thrown and injured.
New York—Charles Lovell, driver; thrown and injured.
Cambridge, Me.—Mrs. Lendall Chadbourne; injured by a bicycle.
Cincinnati, O.—William Borman; killed by train.
Toledo, O.—Fink Sherman; killed by trolley.
Birmingham, Ala—Mrs. Carr; injured by trolley car.
Johnstown, Pa.—George Fleischhauer; killed on railroad.
Ridgewood (Brooklyn), N. Y.—Unknown man killed by trolley.
Junction City, Kan.—Joseph Gibson; killed by train
Richmond, Kan.—Willie Chambers; killed by train.
Omaha, Neb.—Charles Murphy; injured by train.
Clinton, N. Y.—Frank Van Allen; killed by trolley.
Waterbury, Conn.—Unknown man; injured by trolley
Manor, Pa.—Howard Row; killed by engine.
Claremont, N. H.—Three men injured in railroad collision.
Rockport, Me.—Herbert Butler; thrown from wagon by collision with train; two broken legs.
Philadelphia, Pa.—William Johnston; struck by train; injured.
Cleveland, O.—Steve Cenchie; run over by heavy wagon.
Port Clinton, O.—Samuel Wardo; killed by train.
Buffalo, N. Y.—Albert Larson; injured by engine.
Cochecton, N. Y.—Albert Butler; fell from train; leg amputated.
Milwaukee, Wis.—John Donavan; killed by train.
Chicago, Ill.—William Bush; killed by train.
Peoria, Ill.—Walter Mooney; killed by train.
Windsor, Conn.—David L. Roberts; killed by trolley.
Brooklyn, N. Y.—John Dempsey; thrown from wagon; severely injured.
Greenfield, Mass.—William H. Wedgewood, George F. Parmenter and Howard P. Smith; killed in railroad collision.
Lowell, Mass.—Edmund O. Knox; thrown from wagon colliding with trolley; injured.
Springfield, Mass.—Roy Willcox; trolley collision; injured.
McKeesport, Pa.—W. A. Gillespie and Thomas Roland; severely injured; railroad.
McKeesport, Pa.—Fred Erhard; killed in coupling cars.
Norwalk, O.—Conductor and three passengers injured in trolley car accident.
Charlottesville, Va.—Brakeman, engineer and fireman injured.
Reelsville, Ind.—George A. Cole, killed, and six men injured; railroad.
South Boston, Mass.—Francis Cappo; injured by car
Chicago, Ill—John Kalbran; killed by train.
North Chelmsford, Mass.—John M. Howe; injured by train.
Plainfield, N. J., Charles Sprague and George Gedner; bicycle collision; injured.
Pittsburg, Pa.—W. E. Ledger and two children thrown from wagon; injured.
Cincinnati, O.—Five persons injured in trolley collision.
Moberly, Mo.—Mrs. James Morton; carriage collided with train; injured.
Lima, O.—John Swartz; killed on railroad.
Huntington, Ind.—John Erb; injured by train.
Olathe, Kan.—William Lamont; killed in coupling cars.
Lakota, N. D.—J. Evans; killed in railroad wreck.
Grand Rapids, Mich.—Mrs. McClure; injured by trolley car.
Norwalk, O.—George Seitchell and J. H. Bull; injured; collision of trolley and train.
Mounds, Ill—Sandy Mandy; killed by engine.
Chicago, Ill.—Trolley car overturned; six passengers bruised.
North Anderson, Ind.—John Welsh; killed by trolley car.
Cleveland, O.—Paul Tladeck; injured by train.
Portsmouth, O.—William Barr; fatally injured by train.
Loveland, O.—William Clarke; killed by train.
Lima, O.—Calvin Reece; killed by train.
Vicksburg, Miss.—J. Hampton Griffing; died from injuries by trolley.
Louisville, Ky.—Samuel W. Dodge; killed in trolley collision.
Gainesville, Tex.—W. C. Leth; killed in wreck; Henry Dick, injured.
Mount Meigs, Ala.—Troup B. Hodges; killed by train.
Lynchburg, Va.—Tilden Alvis; killed by engine.
Richmond, Va.—William Seal; injured by trolley.
South Cumberland, Md.—George Robert; killed by engine; J. K. Kettle, injured.
Greensburg, Pa.—James Reagan; killed by train.
Scottdale, Pa.—Frank Dessalino; killed by train.
Dickerson Run, Pa.—William Gillespie; injured in railroad collision.
Royersford, Pa.—John Plumley; killed by train.
Palmyra, Pa.—Irvin J. Detweiler; injured by train
Missoula, Mont.—William Johnson; killed by train.
Sanfords Corners, N. Y.—J. W. Moore; injured by train.
Hornellsville, N. Y.—William Dottaker; killed by train.
Irish Creek, N. Y.—Robert Stewart; killed by train.
Saratoga, N. Y.—Van Wagner and Butterfield Lackey; injured in trolley collision.
Plaistow, N. H.—John W. Huntress; killed by trolley.
West Somerville, Mass.—Charles Comee; killed by train.
Swampscott, Mass.—William D. Nichols; killed by train.
North Saugus, Mass.—Michael Donovan; killed by trolley.
Mechanics Falls, Me.—Unknown man; killed by engine
Rockville, Ind.—Anthony Tasso; struck by bicycle; killed.
Bath, Me.—A. M. Franks; injured in bicycle collision.
Fremont, O.—Andrew Weiler; injured in buggy colliding with trolley
Fremont, O.—Mr. and Mrs. John Bender; injured in runaway.
Minneapolis, Minn.—Vine Sanback; injured by truck.
Chicago, Ill.—Mrs. Annie Bron; fatally injured by wagon.
Norristown, Pa.—Mr. and Mrs. Joseph Nyce; thrown out of carriage; injured.
North Braddock, Pa.—G. E. Frank Gray; injured in carriage collision.
Gloversville, N. Y.—Richard McDougal; thrown from wagon; injured.
Providence, R. I.—John J. Duffy; killed by wagon.
Haverhill, Mass.—Barney Brickett; injured in wagon collision with trolley.
Castleton, Vt.—Mrs. Jacob Mound; fell from carriage; injured.
Salem, N. H.—Charles H. Smith; seriously injured by fall from wagon.
Portland, Me.—Driver injured in a runaway.
Pinckney, N. Y.—Charles Carpenter; killed by fall from wagon.
Woburn, Mass—John J. Loftus; killed by trolley.
Binghamton, N. Y.—Michael Kane; killed by train.
Penn Yan, N. Y.—Lawrence Laughran; killed by train.
Middleboro, Mass.—Clarence P. Waul; killed by train.
San Francisco, Cal.—William Rosekamp; fell from wagon; killed.
Los Angeles, Cal.—Roy Judsons; killed by horse's kick.
Peoria, Ill.—Walter Mooney; killed by train.
Ingersoll, Can.—John O'Callaghan; killed by engine
Hornellsville, N. Y.—William Doltage; killed by train.
Seward, Pa.—David B. Wineland; killed by engine.
Brazil, Ind.—Railroad collision; two killed and six injured
Birmingham, Ala.—Johnnie Reese; killed by train.
Baltimore, Md.—Unknown man; killed by trolley car.
Middletown, O.—Edward Connor; killed by train.
Cincinnati, O.—Harry Winters; killed by train.
La Crosse, Wis.—Leslie Chase; killed in railroad wreck.
Huron, S. D.—Fay Jones; killed by train.
Columbus, O.—Christopher Lengeloh; killed by train.
Cleveland, O.—Henry Jacobson; killed by engine.
Cleveland, O.—Carl Bunders; fell from car; injured.
Cleveland, O.—William Brown; struck by trolley; injured.
Dayton, O.—John Natto; fatally injured by train.
Billings, Mont.—Railroad collision; two dead and eight injured.
St. Louis, Mo.—Mrs. Fischer; killed by trolley car.
Buffaflo, N. Y.—Thomas Burns; fatally injured by trolley car.
St. Thomas, Ont.—William O'Hara; killed by train.
Great Falls, Mont.—Unknown man killed by train.
St. Louis, Mo.—William Smith; killed by train.
Magnolia, Miss.—M. Powers; killed by train.
Dixon, Cal.—Collision; passenger killed; engineer injured.
Springfield, Me.—A. S. Hardin; killed by train.
Torreon, Mex.—Engine and tank overturned, killing two and injuring one.
Obe, Ga.—Lawson W. Knight; killed by train.
Comer, Ga.—John Floyd; killed by train.
Cold Springs, O.—John Cronan; killed by train.
Cincinnati, O.—Three killed by trains within twenty-four hours.
Memphis, Tenn.—Ben Connors; killed by train.
La Junta, Col.—Unknown man killed by train.
Oakland, Cal.—Unknown man killed by train.

OCTOBER 6.

Schenectady, N. Y.—Engineer Olds; killed in collision.
Boston, Mass.—Henry Carey; killed by train.
Newark, N. J.—John Thornton; injured by trolley.
Norristown, Pa.—Louis Bush; killed in coupling cars.
Wellsboro, Pa.—O. Buck; killed by train.
McKeesport, Pa.—Jacob Moritz; fatally injured by wagon.
Hoffmans, N. Y.—William Owens; killed in railroad wreck.
Chicago, Ill.—Paul Fredericks; struck by engine; injured.
Buffalo, N. Y.—Theodore Goldbach; killed by train.
Brooklyn, N. Y.—Frank Mills; caught between cars; injured.
Pittsburg, Pa.—William Jones; struck by engine; injured
Colorado Springs, Col.—John C. Kennedy; struck by train; injured.
Ayer, Mass.—Patrick Organ; killed by engine.
Lancaster, Pa.—John H. Geiszel; killed by train.
Phelps, N. Y.—Lawrence Dunn; killed in runaway.
Atlanta, Ga.—Trolley car ditched and two injured.
Pittsburg, Pa.—G. A. Hammer; injured by trolley.
Findlay, O.—Jesse Deckman; struck by trolley; injured.
Washington, D. C.—Richard Bowers; struck by trolley; injured.
Beaver, Pa.—Trolley collided with runabout; two injured.
Plainfield, N. J.—Nicholas Kelley; injured by trolley car.
Altoona, Pa.—William McGirk, jr.; killed by train.
Reading, Pa.—Harry Greenwalt; injured by train.
Martel, O.—Alice Collins; killed by train.
St. Paul, Minn.—Andrew Goreske; killed by horse.
Troy, N. H.—Fred Cobb; killed by train.
Turtle Point, Pa.—J. C. Duell; killed by train.
Roanoke, Va.—Railroad collision; engineer killed and fireman injured.
Richmond, Va.—Clyde Anderson; injured by trolley car.
Steubenville, O.—Anthony Bell; killed by train.

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Rockford, Ill.—Edward Crawford; thrown from wagon; injured.
St. Louis, Mo.—Trolley car overturned carriage; four injured.
Passaic, N. J.—John J. Ashley; injured by trolley car.
Indianapolis, Ind.—Oliver Sisher; injured by train.
Kansas City, Mo.—Earl Pittman; injured by buggy.
St. Joseph, Mo.—Peter Pauly; injured by train.
St. Louis, Mo.—William Breeher; killed by trolley car.
Indianapolis, Ind.—T. O. B. Hessling; injuries by trolley car.
Indianapolis, Ind.—Driver injured by collision with trolley.
Grand Rapids, Mich.—George Armstrout; killed by train.
Sulphur Springs, Tex.—J. A. Key; killed in railroad wreck.
Milwaukee, Wis.—Albert Scheerbarth; killed by train.
Racine, Wis.—Robert Williams; injured by wagon.
Racine, Wis.—Christopher Rood; injured by train.

OCTOBER 7.

Castle Hill, Mass.—Mrs. Charles B. Ferguson; killed by train.
Lynn, Mass.—Henry French; killed by vicious horse.
Galva, Ill.—Fireman Sands; killed in railroad wreck, and Engineer Johnson injured.
Granville, N. Y.—Miss Eustacia Cody; killed by train.
Worcester, Mass.—Runaway; two injured.
Dansville, N. Y.—Josiah Titsworth; fatally injured in runaway.
Newark, N. J.—David Dunham; injured by truck.
Paterson, N. J.—Wagon driver injured by trolley car.
Worcester, Mass.—Collision; one passenger injured.
Cadosia, N. Y.—Arthur Benedict; killed by train.
Thompsonville, Conn.—Timothy Sullivan; killed by train.
Lancaster, Pa.—Thomas Ryan; killed by train.
Toledo, O.—Mrs. Norah Phelan; injured in runaway.
Zanesville, O.—Mrs. Elizabeth Tewell; killed by train.
Columbus, O.—Ralph Edmundson; injured by train.
Cadillac, Mich.—Edward Brewer; leg cut off by train.
Providence, R. I.—Eddie Plante; injured by trolley car.
Pawtucket, R. I.—Daniel Bethel; injured by car.
Holyoke, Mass.—Trolley car struck team; two injured.
Franklin, N. H.—Sibley M. Crosby; injured by handcar.
Westfield, Mass.—Bicycle collision; both parties injured.
St. Louis, Mo.—Hazel Butler; injured by car.
Washington, D. C.—Nellie Sullivan; injured by wagon.
Thompsonville, Conn.—George Darling; injured by train.
South Burlington, Vt.—Runaway; one killed and one injured.
Norfolk, Va.—Lindsay Mowrey; injured by car.
St. Louis, Mo.—Henry Augustine; injured by trolley car.
Atlanta, Ga.—Manley Hazzard; injured by car.
St. Louis, Mo.—Willie Becker; injured by wagon.
Toledo, O.—Mrs. Henry Eppler; killed by trolley car.
St. Louis, Mo.—Harry Lynch; injured by wagon.
Indianapolis, Ind.—Tilly Hawkins; killed by trolley car.
Winona, Minn.—Jacob Herrman, killed by train.
Cleveland, O.—Trolley struck automobile, injuring Harry Edmonds.
Holyoke, Mass.—Joseph Toepfert; injured by trolley car.

OCTOBER 8.

Hackensack, N. J.—Rev. Arthur Johnson, injured by wagon.
Menlo Park, N. J.—One killed and six injured in railroad collision.
New Haven—Frank Schipper, injured by trolley car.
Nutley, N. J.—John McCarthy, injured in runaway.
Attleboro, Mass.—George Hill, killed by train.
New York—Two injured by trolley car.
New York—Dora Lampert, killed by trolley car.
New York—J. H. Butler, injured by trolley car.
Washington, Pa.—Five killed in railroad collision.
Philadelphia, Pa.—John Dougherty, killed by train.
Boston, Mass.—Thomas Norton, injured by wagon.
Philadelphia, Pa.—Trolley car collision; two injured.
Jamaica, L. I.—Wm. J. Palmer, injured by trolley car.
Cannonsburg, Pa.—Collision; five killed and fifteen injured.
Seward, Pa.—Train struck wagon; one killed, three injured.
Leighton, Pa.—Rev. B. C. Krupp, injured by bicycle.
Constableville, N. Y.—Dennis Collins, killed in runaway.
Vestal, N. Y.—Bert Noble, injured by trolley car.
Buffalo, N. Y.—Anthony Pax, injured by trolley car.
Elmira, N. Y.—Mrs. Sarah Hennessy, killed by train.
Buffalo, N. Y.—John Vallen, injured by train.
Kansas City, Mo.—Trolley collision; Conductor Burghart injured.
Steubenville, O.—Amate Pavole, killed by train.
Paw Paw, W. Va.—Adolf Miller, killed by train.
Lima, O.—Miss B. Nichols, injured in runaway.
Alliance, O.—Roy Sprowl, injured by fall from bicycle.
Washington, D. C.—Tony Damenico, injured by trolley car.
Cordova, Ala.—L. P. Porter, injured by train.
Middletown, N. Y.—Benjamin Corwin, injured by wagon.
Middletown, Conn.—Miss L. Fowler, injured by train.
Harrisburg, Pa.—Miss V. Strouse, injured by bicycle.
Cleveland, O.—Henry Boggis, struck by car.
Cleveland, O.—Chester Burns, injured by carriage.
Wheelocksville, Mass.—One injured by trolley car.
Elmira, N. Y.—Thos. Jerell, injured by train.
Harrisburg, Pa.—Henry S. Pentz, injured in runaway.
Youngstown, O.—Harry Tod, killed by train, one other injured.

OCTOBER 9.

Rockville Centre, L. I.—Lewis Robbins, killed by train.
Brooklyn, N. Y.—Gertrude Straub, injured by trolley.
Boston, Mass.—Wm. J. Terry, killed on railroad.
Boston, Mass.—Andrew Bailey, injured by engine.
New York—Trolley car struck wagon; driver injured.
Suffield, Mass.—Wm. H. Lillie, injured in runaway.
Danbury, Conn.—Railroad collision; two killed and twenty seriously hurt.
Johnstown, Pa.—Wagon struck by trolley; one killed, three injured.
Woodbury, N. J.—Thomas Penn, killed by train.
Johnstown, Pa.—George Rodenbaugh, killed by train.
Cleveland, O.—John Berry, fatily injured by wagon.
East Hartford, Conn.—Wm. Merritt, injured in runaway.
Hartford, Conn.—John McDonough; leg crushed by train.
Providence, R. I.—Boy injured by wagon.
East Hilburn, N. Y.—Geo. Nicholas, injured by wagon.
Marlboro, Mass.—Mrs. C. C. Bliss, injured in runaway.
Laconia, N. H.—George Eastman, injured by wagon.
Hoboken, N. J.—John Flemming, injured by trolley car.
Weehawken, N. J.—William Burns, killed by train.
Newark, O.—Dudley A. De Bolt, killed by train.
Alliance, O.—Railroad collision; conductor killed.
Green Island, N. Y.—John Molloy, injured by train.
Seaford, Del.—Mrs. J. J. Truitt, injured in runaway.
Altoona, Pa.—George M. Boyle, hand crushed by car wheels.
South Coventry, Conn.—Thos. Mullen, killed by train.
Pitcairn, Pa.—Unknown man, injured by train.

OCTOBER 10.

Pittsburg, Pa.—August Knope, killed by train.
Pittsburg, Pa.—Dudley Conley, injured by carriage.
Waterville, Me.—Jos. Cummings, injured by train.
Westfield, Wis.—Wm. Hines, killed by engine.
Terre Haute, Ind.—Railroad collision; two killed, six injured.
Wakefield, Mass.—Michael Halliday, injured by train.
Wallingford, Conn.—John W. Mix, killed by train.
Boston, Mass.—Mrs. D. Monahan, injured by wagon.
Johnstown, Pa.—John Kelly, killed by trolley.
Newark, N. J.—John Downey, injured by fall from bicycle.
Valhalla, N. Y.—Christina Diguindo, killed by train.

OCTOBER 11.

New York—Motorman injured in collision.
Bennington, Vt.—Joseph Bennett, killed by train.
Jones Point, Mass.—Three boys killed by train
Boston, Mass.—One injured in runaway.
Boston, Mass.—Wm. J. Murphy, injured by herdic.
Pittsfield, Mass.—Gov. Crane, injured by fall from carriage.
Brooklyn, N. Y.—Benjamin Mason, killed by train.
Great Notch, N. J.—Frank Miller, killed by train.
New York—Thomas Vestor, injured by truck.
New York—Louis Visson, killed by trolley.
New York—John Kennedy, injured by trolley car.

OCTOBER 12.

Boston, Mass.—Col. Wm. H. Oakes, injured by fire engine.
Woodlawn, N. Y.—Wm. Parkinson, injured by train.
Newark, N. J.—Railroad accident, two injured.
Altoona, Pa.—Railroad collision; two killed, two injured.

OCTOBER 13.

New York—Wm. Meyer, injured by wagon.
Bridgeport, Conn.—Sidney M. Brewster, killed in runaway.

AUTOMOBILE ACCIDENTS.

OCTOBER 8.

Plainfield, N. J.—Leona Jardot, struck by automobile; not seriously injured.
New York—Automobile struck cab; driver thrown, but not injured.

OCTOBER 12.

Mount Vernon, N. Y.—Wm. Webber, slightly burned by gasolene tank of automobile catching fire.

England's Casuality List.

Some instructive, not to say startling, figures result from a table of accidents caused by horses, which is being compiled by the Autocar. The table is confined to accidents occurring in Englanr, reports of which appear in the newspapers. It is shown that in the nineteen days covered by the investigation 32 persons were killed and 243 injured by the "uncontrollable horse," as it is termed. On one day, September 6, 3 persons were killed and 25 injured, and on another, September 11, 8 accidents resulted in 4 deaths and 4 injuries. In accounting for the small number of accidents covered by the table, the Autocar remarks:

"Hundreds of horse accidents occur of which no mention is ever made in the daily or local press. This every one knows, as the chances are all against ordinary horse accidents being mentioned at all unless they should come under the notice of a representative of a paper, except, of course, in the case of really serious affairs, such as those which necessitate coroners' inquests, while any accident caused by a motor is always reported."

Diversions of Paris Police.

As the chauffeurs are returning to Paris, the holidays being over, the cycling policemen are renewing hostilities with a vigor worthy of a better cause. A policeman on a motor bicycle was seen exploring each alley of the Bois with a spyglass. As soon as he sees a chauffeur he presses his chronometer, and the victim is "held up." "Où que vous allez comme ça?" exclaims the spyglass man. "You are flying at 60 kilometres! Show me your papers."

As a rule foreigners drive faster than the Parisian chauffeurs. They are caught, of course, but outside Paris they fly "at 60 kilometres" and have nothing to fear.

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The Week's Patents.

710,312. Igniter for Explosive Engines. Howard E. Barlow, Providence, R. I., assignor of one-half to Louis H. Schneider, Boston, Mass. Filed July 25, 1901. Serial No. 69,650. (No model.)

Claim.—1. In an explosive engine, the combination with the piston and cylinder of a chamber communicating with the compression end of the cylinder, an ignition device located in the chamber, a pressure device, a passage connecting the pressure device with the cylinder and so disposed as to be covered by the piston at the latter part of its compression stroke, and a pipe connecting the pressure device with the ignition chamber.

710,329. Explosive Engine for Motor Vehicles. Roy C. Marks, San Diego, Cal. Filed Sept. 7, 1901. Serial No. 74,654. (No model.)

Claim.—1. A gas operated motor having a crank shaft, a crank casing, a recessed fly wheel into which said casing extends to form a closed chamber, valve operating mechanism contained within said chamber, and gearing connecting said valve operating mechanism to the crank shaft.

710,330. Carbureter for Explosive Engines. Roy C. Marks, San Francisco, Cal. Filed Jan. 2, 1902. Serial No. 88,236. (No model.)

Claim.—1. The combination in a carbureter, of an oil tank or reservoir having at one end a carbureting chamber, a valve for controlling the flow of hydrocarbon from the reservoir to the chamber, gauge glass arranged on one side of said chamber, a series of superposed shelves in the carbureting chamber, absorbent material on said shelves, side wicks for conveying hydrocarbon from the lower portion of the chamber to the absorbent material, and a ported air valve arranged in the upper portion of said carbureting chamber.

710,385. Gas Engine. George Westinghouse, Pittsburg, Pa. Filed Jan. 31, 1898. Serial No. 668,558. (No model.)

Claim.—1. In a gas engine, the combination with a cylinder having a cooling jacket provided with an inlet port at one end and an outlet port at the other end, of a cooling fluid inlet pipe provided with a controlling valve, a cooling fluid outlet pipe containing a thermostatic device and a pair of coacting levers interposed between the thermostatic device and the inlet controlling valve, whereby the inflow of the cooling fluid is controlled by the temperature of the fluid as it is discharged from the jacket.

710,003. Automobile. Hermann Lemp, Lynn, Mass., assignor to Elihu Thomson, Swampscott, Mass. Filed March 28, 1900. Serial No. 10,448. (No model.)

Claim.—1. The combination, in a vehicle, of fixed front and rear axles, a triangular frame rigidly connected at two points with the front axle and pivotally connected at a single point to the rear axle, driving wheels and motors supported on the rear axle and located between the pivotal point of the triangular frame and the driving wheels.

710,483. Internal combustion engine. Patrick F. Maccallum, Fairbank, Helensburgh, Scotland. Original application filed May 7. 1901. Serial No. 59,128. Divided and this aplication filed February 13, 1902. Serial No. 93,953. (No model.)

Claim.—In an internal combustion engine, means for maintaining the working cylinder and piston at a low temperature and for keeping the piston free from grit and dirt, said means comprising in combination an annular water or other liquid holding space formed in the working cylinder around the piston, an expansion cylinder of larger diameter than the piston, doors for access to said liquid space, and a packing and scraping ring to prevent downward leakage of water and access of dirt or grit to the walls of the working cylinder.

710,500. Variable speed gearing. George E. McElroy, Brooklyn, N. Y., assignor to the Champion Mfg. Co., Brooklyn, N. Y. Filed January 23, 1902. Serial No. 90,886. (No model.)

Claim.—1. The combination with a driving shaft, two gears fixed thereon, of two connected disks rotatably mounted upon the driving shaft, a sprocket connected with said disks, two sets of gears mounted upon shafts passing between the disks, one set of gears meshing with one of the gears fixed upon the driving shaft, and the other set of gears meshing with intermediate gears which in turn mesh with the other gear fixed upon the driving shaft, the shafts passing between the disks, the intermediate gears, two independent loose internal gears engaging the gears mounted upon the shafts passing between the disks; means for holding either of said internal gears against rotation, and means for locking the disks to the driving shaft, substantially as shown and described.

710,508. Safety stop for automobiles. Charles A. Ott, Pawtucket, R. I. Filed February 7, 1902. Serial No. 93,081. (No model.)

Claim.—In a safety stop for automobiles, a tubular casing having a transverse partition provided with a port, an inlet in the casing for the passage of steam through said port, a throttle valve mounted in the casing, and a hand lever to actuate said throttle valve in the opening and closing of the said port, in combination therewith, of a rod vertically mounted in said casing in the rear of the throttle valve thereof, said casing having a transverse partition from either side of said rod and provided with a port, a valve disk rigidly secured upon said rod, a cross lever connected to the upper end of said rod and having its forward portion pivotally connected upon an arm integral with the casing and its rearward portion terminating in a wide blade, a seat rigidly secured upon the blade portion of said cross lever, with a coil spring surrounding the said rod and interposed between its valve disk and said casing, respectively, as shown and for the purpose specified.

710,595. Cushion tire. Charles Miller, Binghamton, N. Y. Filed October 29, 1901. Serial No. 80,392. (No model.)

Claim.—1. The combination with the rim of a wheel, of a recessed core and a block on which said core rests, said block resting on said rim, an outer casing for said core and means for securing said casing to said rim and adjusting devices connected with said rim whereby said block may be pressed outward and said core likewise pressed outward into said outer casing, substantially as and for the purposes described.

710,630. Motor vehicle. Charles F. Thoms, Highlandtown, Md., assignor of one-half to David Wright, Highlandtown, Md. Filed June 20, 1902. Serial No. 112,486. (No model.)

Claim.—1. In a motor vehicle, a sheet metal body the four sides of which are provided at their lower ends with inwardly projected flanges, angle plates and resting upon said flanges and supporting the seat, and a sheet metal plate forming a combined seat and back and provided with flanges at its edges.

710,646. Carburetter. Ora W. Williams, Cleveland, Ohio. Filed September 30, 1901. Serial No. 77,052. (No model.)

Claim.—1. A carburetter for explosive engines comprising a liquid fuel tank, a mixing chamber communicating therewith, a valve casing; and independently adjustable non-communicating valves arranged within said casing and having independent communications with the mixing chamber, one of said valves governing the supply of air to the chamber and the other the outflow of admixed air and vapor from the chamber to the engine, substantially as described.

710,647. Speed regulator for explosive engines. Louis W. Witry, Waterloo, Iowa. Filed June 11, 1901. Serial No. 64,125. (No model.)

Claim.—1. A combined igniter trip guide and admission valve locking device for gasolene engines, consisting of a combination of an exhaust valve, an admission valve, an exhaust valve stem, an admission valve stem, springs surrounding said valve stems adapted to retain the valves on their seats, an arm slidable upon said admission valve stem for increasing the tension on admission valve spring when exhaust valve is open, an igniter, an igniter trip rod having a catch and wedge for effecting contact with and releasing igniter hammer, means for guiding said igniter trip rod in its horizontal and vertical movements, and means for communicating horizontal and vertical reciprocatory movements to said igniter trip rod, all substantially as shown and described.

710,727. Explosion engine. Walter G. Wilson, Westminster, England. Filed November 1, 1900. Serial No. 35,168. (No model.)

Claim.—1. An explosion engine comprising a plurality of pairs of cylinders, one cylinder of each pair being on one side of the crank shaft and the other being on the other side of the crank shaft, pistons in the said cylinders, cranks on said crank shaft of opposite throw for each pair of pistons, each pair having thus the same phase, the whole being arranged in such manner that there are as many equidistant phases as there are pairs, means for connecting the said pistons and their cranks and means for causing the suctions, compressions, explosions and exhausts to take place in rotation in the cylinders, first on one side of the crank shaft and then on the other side of the crank shaft, substantially as and for the purpose set forth.

710,728. Valve and valve mechanism for gas engines. William O. Worth, Chicago, Ill. Divided and this application filed May 28, 1900. Serial No. 18,268. (No model.)

Claim.—1. A gas engine comprising a cylinder, a reciprocating valve within said cylinder, a chamber outside of said cylinder for containing the valve moving mechanism, covered by said valve, a mechanism within said chamber for operating said valve, a connection within the limits of the said chamber, between said valve and said mechanism, and a means for imparting motion to said mechanism for moving the valve intermittently, substantially as set forth.

710,771. Sparking device for explosive engines. Theodore S. Glover, East Norwalk, Conn., assignor of one-half to Cyrus E. Crabbe, Stamford, Conn. Filed April 15, 1901. Renewed April 16, 1902. Serial No. 103,201. (No model.)

Claim.—1. A sparking device for explosive engines comprising two movable contact points or electrodes, one adapted to make wiping contact with the other, and means for adjusting the speed of the wiping action.

710,793. Pneumatic tire. Frank Mitchell,

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London, England. Filed July 8, 1902. Serial No. 114,752. (No model.)

Claim.—1. A pneumatic tire containing a number of closed air chambers made of india rubber arranged inside a canvas bag, the requisite air pressure in the chambers being produced by external pressure prior to closing the bag.

710,809. Truck frame for motor cars. Albert Schmid, Havre, France. Filed January 28, 1902. Serial No. 91,606. (No model.)

Claim.—A motor car having a truck frame made in two separate and independent parts, independently mounted, one of said parts carrying the motor and driving gear, the other part carrying the car body and being hinged on one of the truck axles and arranged to be swung upwardly to give access to the driving mechanism, said body when lowered resting on springs on the front and rear axles; substantially as described.

710,824. Incandescent igniter for explosive engines. Carl W. Weiss, New York, N. Y., assignor of one-half to August Mietz, New York, N. Y. Original application filed November 10, 1898. Serial No. 696,017. Divided and this application filed April 14, 1902. Serial No. 102,739. (No model.)

Claim.—1. In an explosive engine, the combination with a tubular extension or shell extended rearwardly from the cylinder head, of an independent, tubular igniting ignition tube, open at its forward end only, placed loosely within said shell or extension, substantially as described.

710,841. Mixing Valve for Gas or Gasolene Engines. Alanson P. Brush, Detroit, Mich. Filed June 10, 1901. Renewed Sept. 11, 1902. Serial No. 122,961. (No model.)

Claim.—1. In a mixing valve of the vacuum opening type, the combination with a valve case formed with an air chamber provided with a port leading thereinto, of a tubular rotatable and reciprocatory mixing valve constructed with a closed head and with a port whereby said chamber may communicate with the interior of the valve, and a gasolene inlet valve leading into the interior of the tubular valve, said gasolene inlet valve opened by unseating the tubular valve.

710,849. Valve for Gas or Gasolene Engines. Alanson P. Brush, Detroit, Mich. Filed Oct. 4, 1900. Serial No. 31,991. (No model.)

Claim.—1. A vacuum opening valve having in combination a valve case formed with an interior passage, air and gas inlets to said passage, a partition or diaphragm between said inlets lengthwise of the passage, a rotatable valve seating at the base of the case, a second partition circularly movable with the valve within the case, whereby said passage is divided into air and gas chambers of relatively variable size.

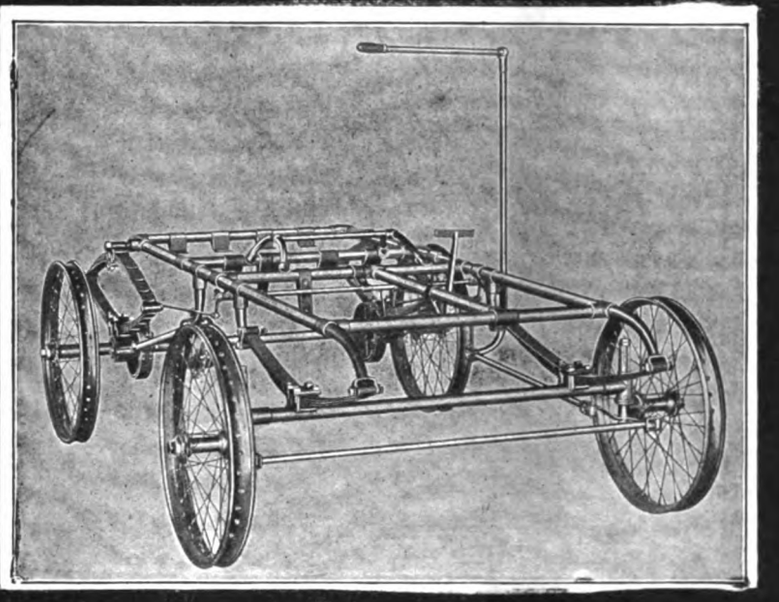
710,911. Gas Engine Cylinder. Hermann E. Ebbs, Nuremberg, Germany, assignor to Vereinigte Maschinenfabrik Augsburg and Maschinenbaugesellschaft Nurnberg A. G., Nuremberg, Germany. Filed May 29, 1902. Serial No. 109,462. (No model.)

Claim.—A removable insertion for engine cylinders having exhaust slots for carrying off the waste gases, comprising an outer casing, cooling passages in said casing, an annular exhaust passage, slots through the inner wall of said insertion communicating with the interior of the cylinder and the annular exhaust passage, a discharge socket for the exhaust gases communicating with the annular exhaust passage, and cooling passages in the outer wall of the insertion,

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in the bars between the inner exhaust slots, and extending radially between said inner and outer cooling passages, substantially as and for the objects set forth.

TRADE MARKS.

38,973. Cycles, Motor Vehicles and Their Parts. Fabrique de Moteurs & de Machines. (Ancienne Maison Zurcher, Luthi & Cie). St. Aubin, Switzerland. Filed June 23, 1902.

The word "Zedel." Used since May 1, 1902.

39,009. Hand Lifting Jacks. Covert Manufacturing Company, West Troy, N. Y. Filed Aug. 4, 1902.

The word "Auto." Used since July 8, 1902.

Necessity of High Compression

The value of high compression to gas-enginery is somewhat overshadowed by the difficulties of preventing premature ignitions in the ordinary four-cycle method. If means could be devised for preventing this trouble, a most difficult problem could be solved. High compressions have already been made possible by withholding the fuel from the cylinder until compression is accomplished and also by injecting a waterspray with the charge. Possibly other means of avoiding the troublesome premature ignitions may be discovered. At present, pressures between 90 and 100 pounds are about the limit for gasolene and 120 pounds for the natural and the artificial gases.

Some people are willing to seek the charm of automobiling only if some one gives them free passes.

Continues to Increase.

During the month of August 114,283 passengers were carried by the Interstate Transit Company, the automobile transfer line operating on the Eads bridge between St. Louis and East St. Louis. The average fare is figured at 7¾ cents, making the gross earnings more than $11,500, which exceeds the preceding month's earnings by $1,000 or more.

The company is to extend its service on the east side, adding a line from Broadway and Washington avenue across the bridge, to the National Stock Yards, on the east side. Other vehicles will be run in other directions in East St. Louis, practically paralleling the street railway tracks, and a system of transfers will be started. The through vehicles will leave Broadway and Washington avenue, on the St. Louis side of the river, every five minutes, it is announced.

The inception of the automobile service had its origin in disgust which seized a business man over the utterly inadequate street car service across the bridge, and he decided to introduce the horseless carriage, which has proved so successful that it threatens to put street cars out of business.

Turn on the Gasolene.

It is told of a Washington, D. C., physician that not long ago he drove out with a party of friends, whom he entertained at luncheon at a hotel. When the party was ready to resume the trip the car refused to go, and the physician labored for a long time in the fruitless effort to induce it to move.

By this time a large crowd had collected, and the party seemed to wonder how it was possible for such a mob to form in such a little while.

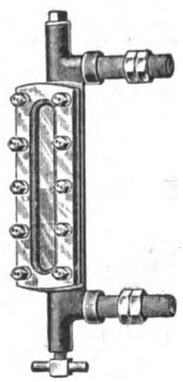
Then some rude man in that collection called out at the top of his voice: "Why don't you turn on the gasolene?"

The doctor's facial expression might have meant anything, although he said not a word. But he quietly laid down his tools, his quick eye sought out the man who had made the suggestion, and, in a manner that was Chesterfieldian to the limit, he said: "Thank you."

Then he turned on the gasolene and the car went sailing off as smoothly as a cup defender.

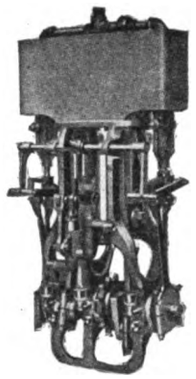
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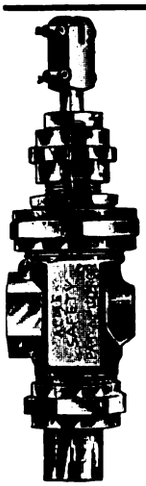
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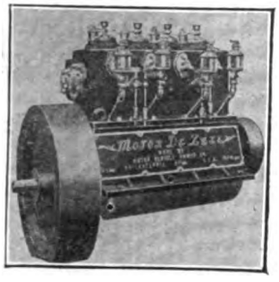
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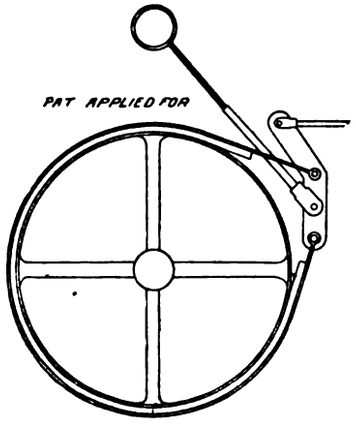
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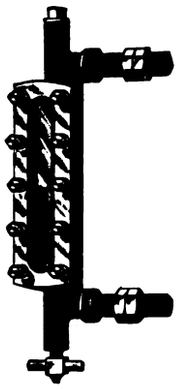
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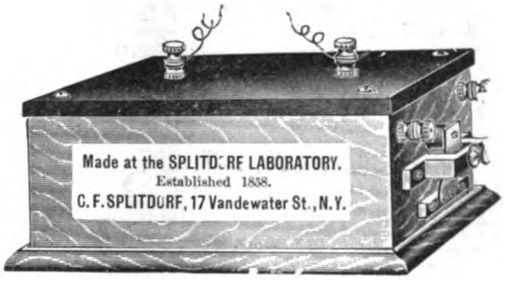
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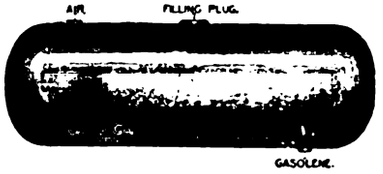
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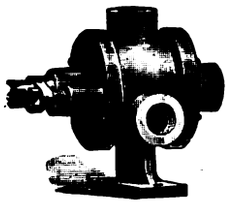


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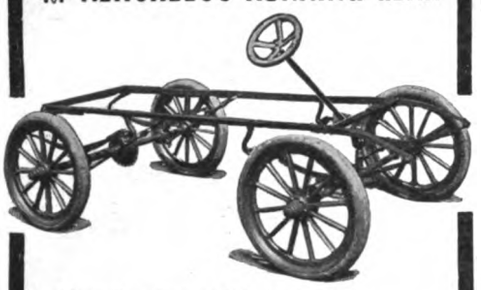
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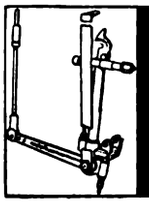
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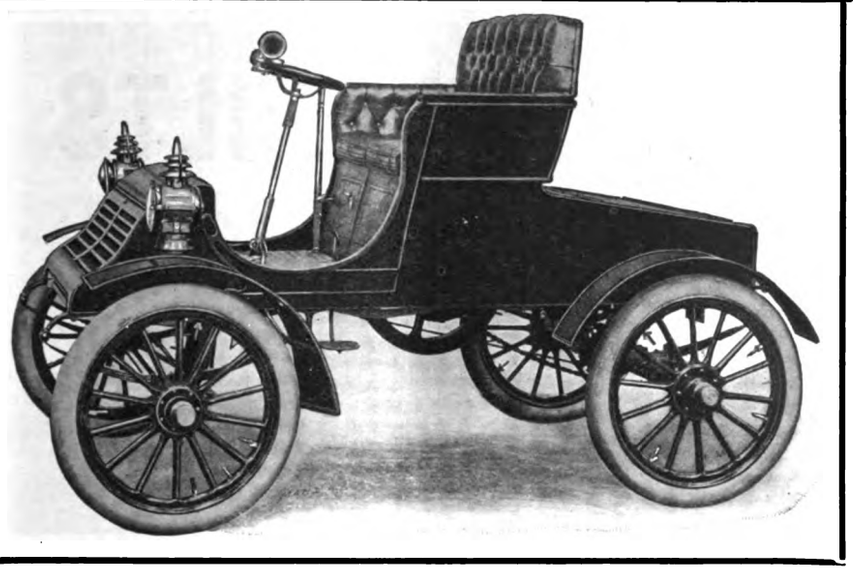
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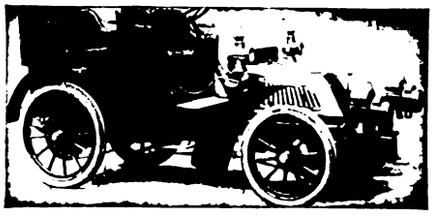
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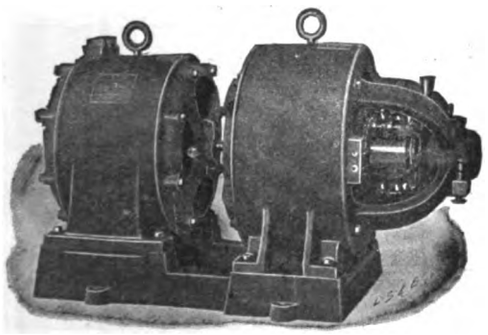


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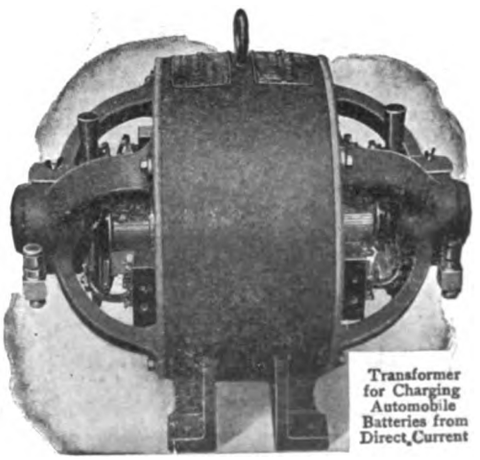
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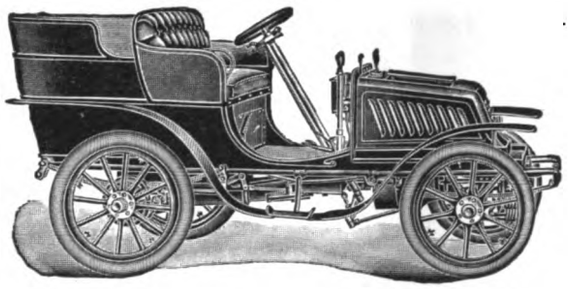
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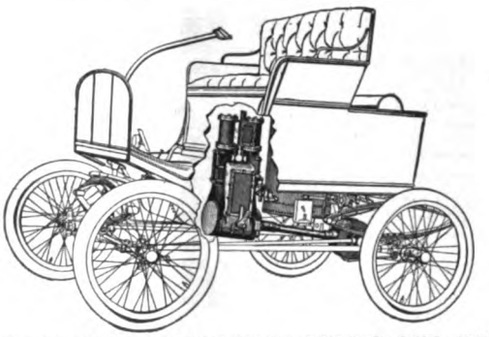


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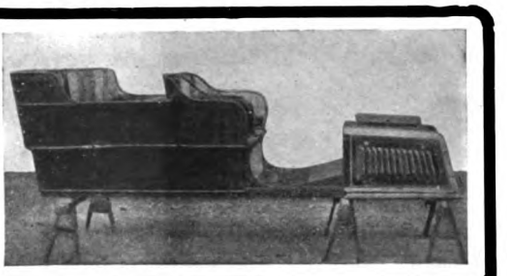
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WIRE OR WOOD EITHER, ON SAME AXLES.

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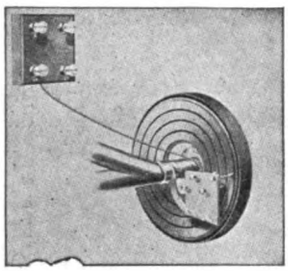
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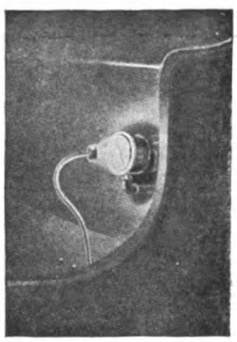
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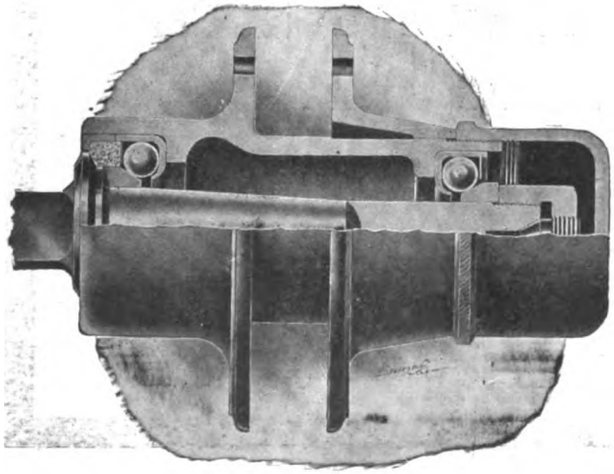
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AGAIN CONCLUSIVELY PROVED IN THE

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IN THE 500 MILE RELIABILITY CONTEST FROM NEW YORK TO BOSTON AND RETURN, ARRANGED BY THE AUTOMOBILE CLUB OF AMERICA,

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, October 23, 1902. No. 4

THIRTEEN TIED FOR PRESIDENT'S CUP

With so Many Perfect Scores, A. C. A. Contest Committee Confesses Inability to Pick a Winner and has Recourse to Novel Procedure—Gold Medals for the Thirteen; Cup to Remain a Club Exhibit.

So marvellously close is the competition for the President's and other cups offered to the cars receiving the highest number of marks in the reliability contest that the contest committee has been compelled to admit that it cannot pick a winner for the first mentioned.

It has decided, therefore, to give to each of the cars making the same record an equal share of the glory. To that end letters have been sent out to the fortunate ones proposing this settlment—that the names of their owners be engraved on the President's Cup and each presented with a gold medal. No opposition to this plan is anticipated.

No less than thirteen cars appear to be tied for first place. Right at their heels is a fourteenth, said to be only one mark, or point, behind its mates, which dispels, in this case, the proverbial ill luck of the number thirteen.

To this number, it is believed, have the the twenty cars claiming clean scores shrunk, the deletion having been made for a variety of causes. Close behind them come several other cars, to which it is proposed to award the three committee cups in the order of their standing.

The information embodied in the foregoing statements was gleaned after a meeting of the contest committee held on Wednesday afternoon at the office of Chairman Scarritt. There the figures in their latest shape were again gone over, and when everything had been considered no way could be seen to award the President's Cup to any one of those tied with 100 per cent without doing an injustice to all the others and causing much dissatisfaction.

It was then proposed that, as all of those with clean scores could fairly lay claim to the cup, the names of all of them should be inscribed upon it; that the cup should then become the property of the club as the joint donation from the several winners of it, and that there should be given to each of those winners a medal suitably inscribed as an individual trophy. It was agreed that this plan would be the best, provided those most interested agreed to it, and the secretary was instructed to write to the several winners and ask their acquiescence.

The idea of the committee is that the second, third and fourth cups are not for perfect scores, and that all those scoring the total of 2,092 points have equal claim to the President's Cup. The next best contestant, the one having 2,091 points—and the contest was as close as this—gets the Scarritt Cup; the next best the Chamberlain Cup, and the next the Hill Cup. It is even possible that there will be ties for these other cups.

The remarkable records made on this run are brought out into relief by an interview which a Motor World representative had with Chairman Scarritt. It was suggested that the rules provide that in case of a tie the committee could award the President's Cup by taking into consideration the general showing, and Mr. Scarritt was asked why this provision had not been sufficient. He replied that several cars had made such an absolutely flawless showing by going all the way without once having been touched with a tool in any way, that this could not be done.

The exact number of those tied with perfect scores has been veiled in considerable mystery. In fact, it has varied from day to day as the figures were repeatedly gone over. That it is likely to be thirteen is based on the following: Chairman Scarritt in speaking of the number said, "It is more than twelve." In going over other details the Motor World man repeated that "the thirteen, then, will be joint winners of the President's Cup and the fourteenth man will get the Scarritt Cup?" Mr. Scarritt answered, "Yes." Subsequently Secretary Butler was asked how it would be possible to get thirteen names on the cup. He said they would be put on small and a plate put on the pedestal telling what the trophy was for.

Dealers to Organize.

Plans are on foot looking to the formation of an association of dealers throughout the country. It is thought that such an organization would redound to their mutual advantage by bringing about an interchange of ideas and securing united action on matters affecting their welfare. Prominent dealers in the East and West are back of the movement, and a great deal of preliminary work has already been done.

Richwine to Succeed Morgan.

The resignation of William Morgan, secretary and sales manager of the Autocar Company, Armore, Pa., has been presented and accepted. He will be succeeded by W. A. Richwine.

Will Not Move for a Year.

It is not likely that the removal of the plant of the Ohio Automobile Company rom Warren, O., to Detroit, Mich., will take place in less than a year.

The Truth Comes Out.

When about a year ago the Motor World reported the absorption of the Overman Automobile Company by the Locomobile Company, officials of the latter were prompt to deny the statement; they also promptly denied that the Riker gasolene car was a Locomobile, affirming that it was an Oversible. The Overman plant at Chicopee Falls is being removed to the Locomobile factory at Bridgeport and the gasolene car will be made there.

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RIVAL HILL CLIMBS

One Fizzled; Second was Stopped by Police; Much is Expected of Third.

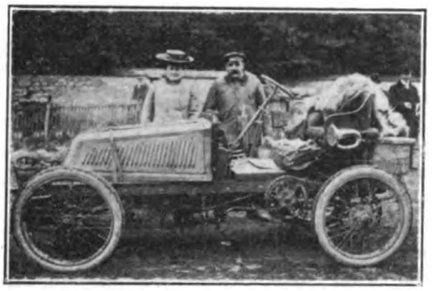
Paris, Oct. 10.—If there is one thing worse than doing an evil turn it is in being found out, and in such a case the vengeance is bound to recoil on the head of evildoer. The editor of the Vélo has had plenty of time to ruminate upon the truth of this proposition during the past few days, for having thrown his boomerang with an unskilled hand it has recoiled on him with such a nasty knock that he is not likely to recover from the effects of the blow for a long while to come.

The history of the rivalry between the two Paris automobile papers has already been recounted here on the occasion of the recent Gaillon hill climbing contest. The Vélo, which at one time represented automobile interests here, was unanimously repudiated by the makers and users when the editor took upon himself a few years ago the hopeless task of smashing the Automobile Club, and accompanied the formation of his abortive Moto Club, by publishing a violent manifesto against racing, which did a great deal to foster the ill-feeling against automobilists which was then beginning to show itself in a very unpleasant manner. Fortunately, Giffard's manifesto fizzled out like his club, and the Vélo suffered seriously from this effort to take the interest of automobilism under its injudicious wing.

DUE TO RIVALRY OF PAPERS.

One result of the rivalry between the two papers was seen in the attempt of the Auto-Vélo to suppress the Gaillon hill climbing test, which had been organized for four years in succession by the older journal. The Auto-Vélo threatened to hold a meeting on the same day as that selected for the Gaillon tests, and having thus drawn custom from this event intended to still further demonstrate its influence by organizing another meeting at Gaillon the following Sunday. The shuffling of dates by Giffard prevented this from being carried out, and instead of having simultaneous meetings we were to have three tests on three Sundays running—the first at Gaillon organized by the Vélo, the second at Château-Thierry, and the third at Gaillon, promoted by the Auto-Vélo. As we stated at the time, the Vélo meeting was an utter failure. Nearly all the makers abstained from taking part in it, and only two big cars competed, the light vehicles and motocycles bringing up a meagre total of twenty. That there could be no doubt as to on which side were the sympathies of makers was proved by the splendid success of the Château-Thierry meeting, which brought together upwards of eighty competitors, and all these vehicles were sent to Gaillon on Sunday to participate in the second meeting. Everything pointed to this test being as successful as Château-Thierry. A large number of people undertook the journey from Paris to witness the trials, and many of them went to Vernon the previous day to see the cars as they were weighed, the number in fact being so considerable that the visitors had to wander about Gaillon in search of a place upon which to rest their weary heads.

The meeting was to have started at 9 o'clock and the morning devoted to tests of motocycles and voiturettes, while the other vehicles were to take their turn in the afternoon. Just as the automobilists were preparing to leave Gaillon for the hill which lies about a mile out of the town the organizers received the visit of a captain of gendarmes, who announced that he had instructions from the Prefect to prevent the meeting from being held, even if it were found necessary to fell trees across the road. And then it came out that there had been a conflict between the organizers of the test and the Prefect of the Department, who, according to the new automobile regulations, can sanction



THE NEW BOYER 4 CYLINDER CAR.

or veto meetings, even when approved of by the mayors, in the event of the course encroaching upon more than one commune. The law, however, says that the sanction of the Prefect is not necessary when the meeting takes place in one commune, and when the Prefect refused to give his permission the promoters went to the Minister of the Interior, who personally sanctioned the test, and reassured the promoters by informing them that in this case the Prefect had no authority. Unfortunately it appears that he has jurisdiction over the national highways, whether in one commune or not, and as he was prepared to back up his authority by the force of the army the promoters found themselves under the necessity of postponing the meeting.

Naturally the organizers accused Giffard of having induced the Prefect to veto the rival meeting. Some color is given to this assertion by the statements of the mayors, who affirm that he had asked them not to authorize the Auto-Vélo tests, and though Giffard has been challenged to say on his word of honor that he did not similarly approach the Prefect he has not replied by a direct denial, and his explanation has certainly not given satisfaction to the hundreds of people who were put the expense of making a useless journey to Gaillon on Sunday. Feeling ran so high that when the green paper arrived at Gaillon for gratuitous distribution the enraged automobilists seized the lot and made a bonfire of them. As the result of this incident a deputation of makers, headed by Serpollet, called on the Prefect and pointed out to him the serious consequences that would follow upon the prohibition of the meeting for manufacturers who had spent millions of francs on their cars, and he finally agreed to sanction the meeting for Sunday next.

DESIGNS FOR NEXT YEAR.

The hill climbing tests are usually of a particularly interesting character on account of the fact that, being the last meeting previous to the Paris automobile show, makers are anxious to put their new vehicles to the test, and thus among the cars weighed at Vernon on Saturday there were several new models. De Dietrich et Cie. of Lunéville, who have always identified themselves with the Amédée Bollée system of vehicle with two cyliner horizontal engine, which they still adapt to their industrial cars, have for some months past been building touring and racing cars on the Turcat-Méry system, and at Gaillon they had a new type of racing machine of 30 h. p. The mechanism of this vehicle has been designed upon the lines of the Mercedes with the same system of motor carburetter and transmission, but modified here and there to secure greater simplicity, and in view of the lower power as compared with all the other big French racing machines the new De Dietrich has performed very creditably in the different events in which it has taken part. Another car which has undergone an entire change in design is the Georges Richard, which originally was only constructed as a light carriage with single cylinder motor and belt transmission, but since M. Brasier, the late engineer of Mors, became associated with the Georges Richard Company, they have abandoned their old and somewhat antiquated system and are now following the lead of the big makers. As was to be expected after his long connection with the Mors Company, Brasier has applied to the Georges Richard cars many of the features of the Mors vehicles. He has taken the leading principles of construction, such as the motor and the direct drive on the top speed, and has modified them to secure greater simplicity and efficiency, and it will be interesting to see in the forthcoming tests how far he has succeeded in this experiment. The new Boyer is also an interesting vehicle with four cylinder vertical motor, and in fact the general tendency of makers is to adopt a common type of motor and transmission with slight modifications to prevent the car from being a slavish imitation of the successful vehicles. At one time it was easy enough to tell the make of a car by its external appearance, but nowadays it is a difficult matter to distinguish at a glance one from the other. Fournier was at Gaillon ready to take part in the tests with his big Mors, and this was the first time he had participated in a contest since the Paris-Vienna race. With Fournier, Gabriel, Serpollet and other famous drivers competing on Sunday the strug-

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gle on the Gaillon hill promises to be of more than ordinary interest.

The Automobile Club has refused to ratify the records at Deauville. This was a foregone conclusion as there was a crushing weight of evidence against the accuracy of the times, and it was clear that while the watches were synchronized before the tests began there was a difference of seven seconds between them when the meeting terminated. In fact the performances of the cars jumped so suddenly from the normal to the abnormal that it was easy to fix the exact time when one of the watches went wrong. The experience has had one good effect, in showing that with the terrific speeds now obtainable with automobiles, it is impossible to rely absolutely upon human timekeepers, and several systems are now being proposed for taking the times mechanically. One of them is to be experimented with at Gaillon on Sunday.

When the automobile globe girdlers, Dr. E. Lehwess and Max Cudell, left Paris in June last with the Passe-Partout, nothing was heard of them for so long a time that it was supposed they had given up the journey, but a few weeks ago we had a line from them from Warsaw and this was followed by a message from St. Petersburg, dated Oct. 3. Dr. Lehwess stated that he has had no end of trouble with the Russian roads, but he has every confidence of getting successfully through his long journey. His next stage is Moscow. The doctor is evidently not hurrying things for he has taken three months to go from Paris to St. Petersburg, and at this rate the Passe-Partout will look a very antiquated vehicle by the time it finishes the journey, if it succeeds in getting round the world at all.

Will Probably Appeal.

There is every probability that the verdict rendered against Felix M. Warburg at Trenton, N. J., a couple of weeks ago will be appealed. Damages in the sum of $12,700 were awarded J. M. Hughes on account of the alleged frightening of his horse by Warburg's automobile at Long Branch, N. J., last summer.

It is understood that Warburg is strongly disposed to appeal, in which stand he is heartily supported by the American Automobile Association and the Automobile Club of America. George F. Chamberlin, of the latter organization, expressed himself as follows regarding the matter:

"We absolutely must put a stop to this practice of suing a motorist for any accident which may or may not have been the fault of the automobilist. We probably will not be able to discourage the suits, but we certainly can prevent such verdicts as this which has been rendered against Mr. Warburg. If a few of the cases of arrest and imprisonment which have been made out against a number of our automobilists are carried to the court of last resort and the plaintiff made to pay the costs the motorphobiac may be just a little more careful how he brings his actions in the future."

ESCAPES THE RAIN

Chicago Club Runs Two-Days Meet — New Classification System Works Well.

Some interesting racing resulted from the two days' meet held by the Chicago Automobile Club on Friday and Saturday of last week. The events were run at the track of the Harlem Jockey Club, which was in fair condition, but rather slow.

The new classification system for gasolene cars was used, and it seemed to be an improvement over the method generally used. Closer finishes in some of the races were witnessed, and the cars as a whole were more evenly matched than is usually the case. The first day's races were witnessed by about 2,000 people, while the second, when the track had dried out somewhat and was much improved, had 3,000 out to witness it. The results were as follows:

FIRST DAY.

Three miles, special invitation, gasolene; three entries—First, Oldsmobile, entered by the Oldsmobile Motor Works and driven by D. B. Huss—time, 6:42; second, Oldsmobile, entered by the Olds Motor Works and driven by J. B. Burdett—time, 6:43.

Ten miles, gasolene, 0.70 to 1.00 class; five entries—First, Peerless, entered and driven by A. C. Banker—time, 17:03; second, Winton, entered and driven by Frank X. Mudd—time, 18:24; third, Winton, entered by Charles H. Tucker and driven by John E. Fry—time, 18:29 2-5.

One mile, steam, stock machines only; five entries—First, Hagaman & Hammerly, entered and driven by L. W. Sheppard, M. D.—time, 1:41 2-5; second locomobile, entered by Andrew J. McDuffee and driven by J. W. Sunderland—time, 1:44 2-5. In this race one of the three Locomobiles caught fire near the finish and was thus prevented from finishing third.

Ten miles, gasolene, 0.50 to 0.70 class; four entries—Won by an Oldsmobile machine entered and driven by J. B. Burdett.

Pursuit race, 0.35 to 0.50 class, time limit 30 minutes; four entries—Each contestant started at a different quarter-mile mark, and as soon as caught by the machine following retired from the race. Won by Oldsmobile entered by Olds Motor Works and driven by D. B. Huss—time, 12:35.

Five miles, handicap; four entries—Won by Winton machine entered by Winton Motor Carriage Co. and driven by Charles B. Shanks—time, 7:17.

Special race between Peerless Yellow Kid, entered and operated by A. C. Banker, and Winton racing machine, entered and driven by Frank X. Mudd. This race of five miles caused the keenest interest of any as being between two specially fast and well known machines. Won by Mr. Mudd—time, 8:35.

SECOND DAY.

Race No. 1.—Five miles, gasolene, 35 to 50 class No. 18—Oldsmobile, entered by Olds Motor Works, operated by D. B. Huss, first—time, 11:13 2-5; No. 19, same make., entered by J. B. Burdette, operated by himself, second; No. 15, Friedman, entered by Friedman Automobile Co., operated by B. M. Young, third; No.10, Oldsmobile, entered by J. E. Stevens, operated by same, fourth.

Race No. 2—Twenty-five miles, all makes, all weights and classes—No. 14, Winton, entered by Winton Motor Co., operated by Charles D. Shanks, first—time, 39:38; No. 2, Winton, entered by Charles H. Tucker, operator John E. Fry, second—time, 41:26; No. 4, Winton make, entered by Frank X. Mudd, operated by him, third.

Race No. 3—Five miles, steam race: No. 11, locomobile, entered by Locomobile Co. of America, operated by Sykes, first—time, 8:04; No. 17, Hagaman & Hammerly, entered by L. W. Shepard, M. D., operated by him, second.

Race No. 4—Five-mile handicap: No. 27 first, autocar, operator F. C. Green—time, 9:49; No. 10 second, Oldsmobile, operator J. E. Stevens; No. 19 third, entered by J. B. Burdett, operator J. B. Burdett.

Race No. 5—Five-mile invitation handicap: No. 18 first, entered by D. B. Huss and operated by him—time, 9:55; No. 19 second, entered by J. B. Burdett, operated by him; No. 23 third, entered by J. Frye, operated by him.

Bostwick Undergoes More Operations.

When A. C. Bostwick was encountered by the Motor World man at Norwalk on Wednesday last he seemed to be in his usual health and spirits. Only two days later, however, he was in a private hospital undergoing a dangerous operation, of which it can only be said that his chances of recovery are good.

It will be recalled that last spring Mr. Bostwick underwent an operation, and it was thought that it was completely successful in removing the trouble complained of. Such was not the case, however. The former operation, made on the upper part of the well known automobilist's nose, only helped him temporarily. The catarrhal affection which was troubling him was only helped, not cured. So unsatisfactory did his condition become that a second operation was decided upon.

It was performed in Dr. Bull's private hospital in this city. There an operation was performed on him on last Friday for the removal of an abscess in his head. The operation is said to have been difficult, as the growth was within a fraction of an inch of the brain.

On Tuesday it was reported that he will probably have to undergo another operation for abscess, the second within a few days. It was said that it would be only a minor one, not dangerous, nor as serious as the two preceding ones. It will be performed by Dr. Holbrook Curtis, who has charge of the case.

Mr. Bostwick is able to see his intimate friends, and has a telephone at his bedside, by which he can communicate with his wife at Orienta Point.

Joint Exhibit Given Up.

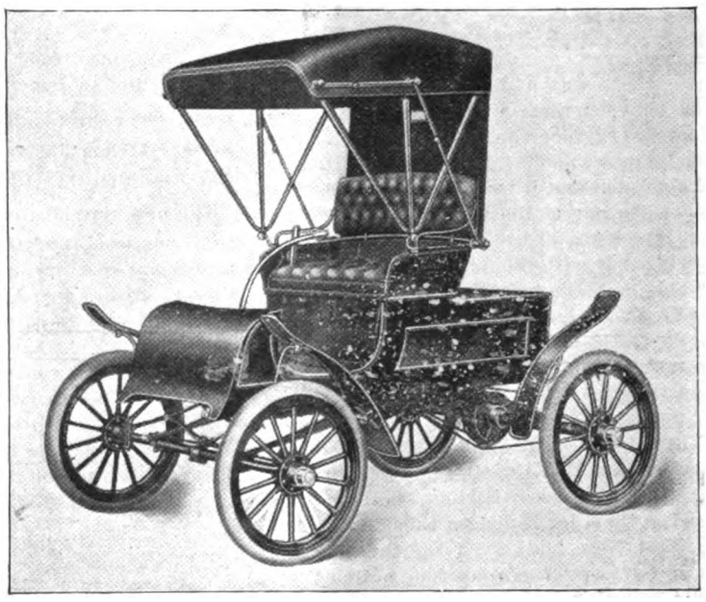
There will be no joint exhibit of American makers under the auspices of the National Association of Automobile Manufacturers at the London shows. The English association of manufacturers has decided to patronize the Crystal Palace show of January, which would conflict with the New York show in Madison Square Garden and it was not deemed politic by the N. A. A. M. committee to attempt an exhibit in London in Agricultural Hall at the other English show in March, so the project is off till 1904.

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NEW YORK, OCTOBER 23, 1902.

The accumulation of accident evidence which we have been presenting for several weeks, and will bring to a conclusion next week, tells its own story—a grim, nay, an appalling, one. On the one hand is an enormous number of casualties, many of them fatal, due to causes so closely interwoven with our complex modern life that hope of relief is quite out of the question; on the other is a list of accidents caused by automobiles, insignificant in itself and rendered still more so by comparison with the others.

The Event's Blue Ribbon.

When the president's cup was offered for the best record in the reliability contest it is a pretty safe assertion that neither its donor nor the public understood what prominence it was destined to attain—how large it was to loom before the contest drew to a close.

But there is no longer any disillusion about the matter. The importance of the cup is now well understood. It is the blue ribbon of the event, and as such is coveted with a keenness that has no parallel in the history of the industry in this country. Both as a sportsman's trophy and a splendid advertisement it is valued, and the fortunate owner who gets it will have ample cause to congratulate himself on his success.

When the run drew to a close and it was found that perfect scores were claimed for twenty cars, the disposal of the president's cup and the three others donated by the members of the contest committee did not appear to be an easy matter.

Fortunately, the rules were framed as if in anticipation of such a contingency, although it is doubtful if such a result was really expected. The rule relating to the disposal of the cups contains this paragraph:

"Should two vehicles both receive the same number of marks the committee will decide which vehicle is entitled to the cup, taking into consideration the general performance of each vehicle."

That appears to settle the matter. It is scarcely conceivable that two or more cars should turn out to have performances alike in every particular. Times were taken at 12 controls, and it is quite certain that between them a better record for one car can be figured as compared with another. But even if it were otherwise it would not be a hopeless case. A more meritorious performance would be made by the car which underwent no repairs than by one which did not, even although the repairs had been made at the controls, where no penalty was imposed.

At the same time, it will readily be admitted that the committee's task in awarding the cups is no easy one.

Their announcement is awaited with almost painful interest, and it is no exaggeration to say that hundreds, if not thousands, of dollars would be freely given for the cups if they could be legitimately secured by that means.

THE WEEK'S CASUALTIES.

TOTAL: KILLED, 123; INJURED, 331.

RAILROADS:	**Killed, 105 / Injured, 109.**
TROLLEYS:	**Killed, 13. / Injured, 90.**
HORSES:	**Killed, 5. / Injured, 106.**
BICYCLES:	**Killed, 0. / Injured, 24.**
AUTOMOBILES:	**Killed, 0. / Injured, 2.**

TOTAL, FOUR WEEKS: KILLED, 375; INJURED, 801.

It Fills the Bill.

A problem, the solution of which was attended with no little difficulty, confronted the committee in charge of the Rallability Contest in the matter of tires, and how they should be disposed of in the rules.

Should the policy of eliminating them from the number of penalized stops be continued; and, if this question was answered in the affirmative, would it not defeat one of the objects of the contest, viz.: the desire to obtain complete data regarding the behavior of the motor vehicle in its entirety? Tires form an essential part of the automobile, and their improvement is little, if anything, short of that of the engine, the running gear, etc., in point of importance.

On the other hand, as no maker produces his own tires, would it not be manifestly unfair to hurt his chances, or throw him out utterly, for some circumstance quite beyond his control, such as tire troubles?

An affirmative answer is the only one possible to make to this question. It remained, therefore, to hit upon a way of protecting the vehicle makers from this calamity, and to at the same time keep tab upon the work of the tires.

The plan of non-penalizing tire troubles, and yet obliging the observer to make a careful note of them, along with every other happening, which was the one adopted, was just the thing.

The contest itself furnished abundant proof of the wisdom of this decision. A veritable slaughter would have taken place had tire troubles not been penalized, while to ignore the matter altogether would have been but little less unfortunate. It is not often that a decision is so emphatically justified by the event.

One Year's Changes.

It is a significant fact that interest in the report of the contest committee of the Automobile Club of America centres on the cup awards.

No one seems to care a rap about the certificates, whether first, second or third class. They will be accepted, of course, but no one labors under the delusion that they play any real part in the matter. The run dwarfed them. Where practically all the survivers qualified for certificates there can be no very great merit in obtaining them.

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A year ago the battle for first class certificates was a fierce one.

Only 20 cars were awarded them, and it was considered remarkable that there should have been so many to fulfil the requirements necessary to qualify for them. Twelve miles an hour was then, as now, all that was necessary, but those on the run well remember what a terrible struggle it was to average this figure. The combination of vile roads and bad weather had something to do with it, of course, but there would have been enough to struggle against under ordinary circumstances.

It is notorious that in the run which came to an end last week it was the easiest matter imaginable to average such a speed that certificates would be qualified for. So easy was it, in fact, that many operators, their sheet having been marred by one or more stops, lost nearly all interest in their own work and watched that of their more fortunate rivals. The chances of their finishing without a stop were discussed at length.

Such a change can mean but one thing—a marvellous improvement in both design and construction.

In the face of it, few can doubt that the practical motor vehicle, the kind that can be depended upon to get there and get back, is really with us at last.

Little Things That Trouble.

There were more than a reasonable number of mishaps due to ignition troubles in the reliability contest which came to an end last week.

As a rule they interfered but little with the average speed of the cars, because it was possible to put them to rights in a very short time and thus enable the car to proceed on its way. One of the objects sought by the contestants, the securing of a first class certificate, was therefore rarely balked by this cause.

But the aspirants for non-stop records—perfect scores, in other words—could lay no such unction to their hearts.

Delays of any kind wrought havoc with their plans, and it made little difference whether it was a broken shaft or a fouled sparking plug, whether the stop consumed half a day or half a minute; the result was identical in each case, and meant failure.

The matter was made more aggravated by the fact that no care or foresight seemed to avail to guard absolutely against such troubles.

One operator on the run said that at both morning and noon stops he made it a point to carefully examine his sparking plugs, connections, etc., not because he expected to find anything wrong, but to make certain that nothing was wrong.

Nevertheless, when the return journey was well advanced this same operator's car came to a stop on account of a dirty spark plug, and spoiled a record that up to that point had been perfect. It was put to rights almost instantly and the journey resumed, but the damage had been done and it was irreparable.

Such happenings as these do not impugn the reliability of the cars that are subject to them. But they are annoying, and it is a reflection on those concerned that they cannot be put a stop to or at least reduced to a minimum.

Would Prove of Benefit.

Now that the chief event of the season has been brought to a successful conclusion, and future events are being talked of, it is timely to call attention to the fact that brake tests, such as have been conducted abroad, have never even been spoken of in connection with events here.

It is true that in any road test, such as that of last week, the efficiency or non-efficiency of the brakes must inevitably be demonstrated.

It is extremely unlikely that any car could go through with credit if there was anything wrong in this respect. Luck might favor it for awhile, but over such hills as marked the greater part of the distance in the reliability contest, for example, luck alone could not account for a car's immunity from accident or mishap. The streak would be broken sooner or later, and the deficiency stand plainly revealed.

But there can scarcely be any denial of the assertion that a braking contest would bring all this out more plainly and more quickly than anything else.

That all cars are suitably equipped in this respect it would be idle to contend.

But it is otherwise with the great majority, and a demonstration of this fact would be an undoubted benefit, as well as afford some interesting observations.

Automobilists' Favorite Month.

So far this autumn the motor vehicle enthusiast has not had occasion to complain of one of his chief enemies—dust.

As he is hard to suit, however, he has not failed to uplift his voice in denunciation of the contrary state of affairs—the too general prevalence of rainy days and muddy roads.

It looks, however, as if, with the departure of the equinoctial, we are to experience a change for the better.

During the greater part of the present month bright days, clear skies and a grateful sun are, with reason, expected to be the rule and not the exception. They go to make October the best month of an unusually fine season of the year.

With such ideal weather, and the roads at their best, it is small wonder that the automobilist regards the month which ends with Hallow'een with particular favor.

The time is approaching when low temperatures will prevail and owners of gasolene cars will be disagreeably reminded of the fact that water cooling systems are vulnerable points that must be looked after carefully if damage would be avoided. The long immunity enjoyed will make it all the harder to cope with the matter. The placing of non-freezing mixtures in the water tanks, the constant care to drain tanks, pipes, cocks, etc., of the last vestiges of water when the car is put away for the night—all have been omitted during the many months of fine weather. But they will have to receive attention again, and it will be the part of wisdom to make preparations in ample time. The alternative will be damage such as cannot always be repaied readily.

There was a time when no one could ride, drive or ride in an automobile without wearing at least an automobile cap, and, if he wanted to be comme il faut, he added a leather coat and gloves, and perhaps leather breeches and leggins. Without this insignia of his vocation, or avocation, he was undone. But times have changed, and with it automobile costume. Leather garments have been to a considerable extent relegated to the professonal automobilists, and the same may be said, to a somewhat less degree, of the regulation automobile caps.

Many otherwise provident automobilists, who never think of starting out on an extended run without a generous supply of tools, supplies and parts, omit to take a lifting jack along. Yet, as every one knows, this useful little article is frequently needed, and needed badly. It takes up but little room, and its weight—and even that is not excessive—is really a small matter when it is remembered how much a modern car and its impedimenta scale down. Will the time ever come when this curious remissness is corrected?

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'BUS LINES BURST

Although Money-Makers two Such Enterprises Fail in Manila—Opportunites That Offer.

Manila, P. I., Aug. 27.—Although an automobile 'bus service should prove in the nature of a gold mine in this place, the two attempts in that direction has failed unaccountably.

In March of last year a company with $50,000 Mexican currency (on paper) was organized to operate an auto 'bus service, and some of those interested in August of last year ordered two American steam wagonettes, capable of carrying twelve persons. The vehicles did not arrive here until eight months after the order was placed. When set up and placed on the street, to the surprise of the promoters they found that the machines had been tested before leaving the States and that all the water had been left in the regulators. As a result the regulators and many of the pipes were full of rust and the wagonettes were in no condition to perform their duties, the immediate result being one burned out boiler. After being cleaned and rearranged they gave fair satisfaction, and the 'bus line was operated for 23 days, and was making at the rate of more than 50 per cent on the investment, besides leaving a good margin for repairs and reserve, when the bottom dropped out of the company.

Soon after another company was organized for the same purpose, and ordered fourteen of the same wagonettes. After placing the order, however, the courage of these people oozed out, and when the machines arrived they were left on the dock and only recently were returned to San Francisco.

Although, as stated, there is no place in the world where a properly financed company would earn such large dividends, the lack of capital in this place sets the opportunity at naught. The price of gasolene is also a discouraging factor. It costs here about 45 cents, gold, a gallon. If petroleum could be used it would reduce the expense by more than one-third.

The automobile business in this country is very limited. A few French machines have been sold. There are also four American steam carriages in town. Tobias Wright, who was one of the first to become interested in the subject, and who was treasurer of the original 'bus line, has imported parts for a heavy runabout and is experimenting with the view of assembling carriages here, as he states that it is his experience that none of the motor vehicles that come to this country are suited to its roads. He believes, however, that the islands will prove a great field for automobiles, if a serviceable machine can be sold here for $1,500 Mexican, or, say, $750 gold. He bases his opinion on the fact that a good horse costs about $150 gold, and a good carriage $400, and the saving in food for the horse and care and up keep of harness and carriage would make the automobile a really economical vehicle.

The speed limit in Manila is eight miles an hour. This, however, was the limit before there was a motor vehicle within 10,000 miles of the island.

The Price of Oldsmobiles.

Asked if there was any probability of an increase in the price of the Oldsmobile, as had been rumored, W. C. Morley, of the Olds Motor Works, said:

"While I can fully understand why such an idea got abroad, I do not at this time care to give a definite expression of opinion.

"The large and rapidly increasing demand for the Oldsmobile certainly keeps our facilities for producing them at the utmost tension, and we are facing conditions never before known in America. The tremendous demand on all sides for iron, steel, rubber and all the other materials which enter into the manufacture of automobiles, the severity of the coal strike, the scarcity of skilled labor, combined with the call for the Oldsmobile, would fairly justify a sharp advance in price. But inasmuch as we have discounted all these factors in advance, we are not being affected so largely by these as would be expected. As the pioneer motor runabout, adaptable to the desires and requirements of all classes, the Oldsmobile is bound to be in still greater demand, and the very force of this demand would fully justify an increase in price; but just at present we are not ready to make it."

Sailing Under False Colors.

A person representing himself to be Ernest Cordingley of the Motor Car Journal, London, recently called at the Motor World offices. Charles Cordingley of the first named journal writes stating that there is no such person as Ernest Cordingley, and that he has no relative in the United States. The person referred to, he says, is an imposter.

NO SPACE CHARGES

Other Favoring Conditions for Exhibitors at St. Louis's World's Fair.

Every effort is being made to have a showing of automobiles at the St. Louis World's Fair commensurate with the importance the industry has assumed. Offices of the exposition will shortly be established in this city, and the work will be prosecuted still more vigorously.

No charge for space will be made. The automobile exhibits will be housed in the Transportation Building, which covers an area of 16 acres, is centrally located and is, architecturally, by far the most attractive building in the exposition.

The foreign governments will be given a lump space in the department of transportation exhibits, which will be filled by their locomotives, cars, railway material, vessels, carriages and automobiles. The automobile section will be kept together as far as possible, and the exhibit of the United States automobile manufacturers will not be separated, and it is hoped to be able to arrange the space so that it will connect directly with the exhibit of similar manufacturers from other countries.

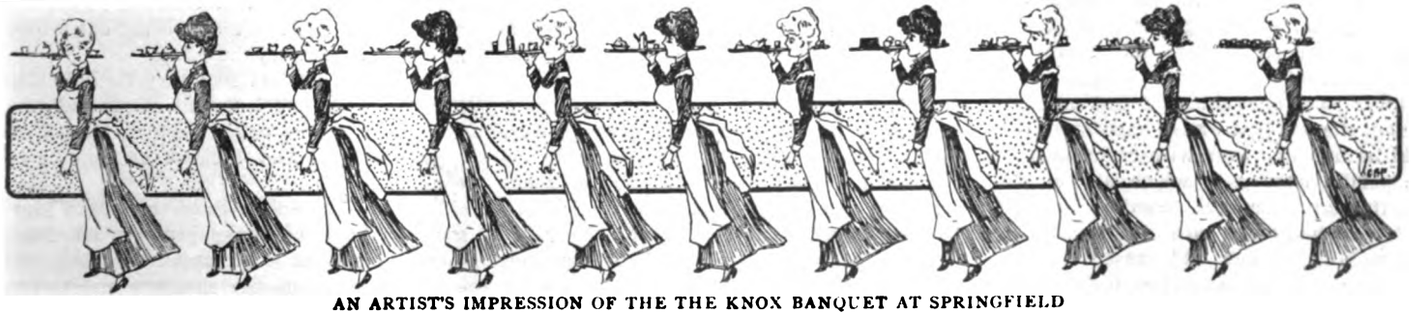
A large number of applications from auto-West, has been received, and A. C. Baker, assistant chief of the transportation department, in a letter to the National Association of Automobile Manufacturers, says that a magnificent exhibit from France is expected.

Applications for space must be made to the department of transportation exhibits.

Exhibitors will receive a reasonable amount of electrical power for lighting purposes free. For a special lighting, such as signs, etc., a pro rata charge will be made.

Changed the Sign.

From "automobiles not admitted" to "automobiles repaired" is a far cry, and one well calculated to cause confusion. The change has made no end or trouble for J. L. Kernochan, a wealthy member of the Hempstead, Long Island, colony, whose antipathy to the automobile is well known. At the entrance to his place, The Meadows, a sign bearing the first inscription was placed. Some wag altered it by changing "not admitted" to "repaired," and since then automobilists have made the lives of Mr. Kernochan's people miserable by applying for help.



AN ARTIST'S IMPRESSION OF THE THE KNOX BANQUET AT SPRINGFIELD

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REPORTING THE RUN

How it was Planned, and the Difficulties Encountered—Clam-like Observers—Trouble With the Checkers, and the Remedy.

"It may be thought that reporting an event like that of the reliability contest last week is easy and that the reporters had a sinecure, but let me tell you that they had no bed of roses to repose on. As one of the Motor World news getters I wish to dispel any such illusion.

"I had been through the ordeal before, and I knew pretty well what was in store when I started out from the Plaza on that beautiful Thursday morning. It was not to be all fun. There was work ahead of us, work in great, big chunks.

"In evolving an elaborate system of espionage—as some of the drivers did not hesitate to call it—whereby its observers were to keep a complete record of the work of their cars, the Contest Committee wrought admirably. But they did not make our work easier. In fact, they increased it threefold. No official information being given out during the run, we were obliged to obtain unofficial information for ourselves. There were a thousand and one points—almost—to cover, and until we got things systematized chaos reigned. It was as if a heterogeneous collection of matter was poured into a hopper, there to undergo many changes, and finally to come out at the small end of the machine, refined as to quality and shrunken as to quantity.

"The methods we employed throughout the run were very simple. Starting after all or nearly all of the cars had been sent on their journey, the next control station was headed for by the Motor World car and if possible reached in advance of the contesting vehicles. En route everything of interest was picked up, particularly stoppages of any description.

"At the controls themselves the effort was made to glean from the operators and observers particulars of interest relating to their run. This was no easy matter in the hurry and scurry that invariably occurred when the stopping place was reached. But we did the best we could, and had to be satisfied with that. After the close of the night control we obtained from the checkers a list of the arrivals and departures during the day.

"The carrying out of the programme was not as easy as the making. At Norwalk and at New Haven on the first day there was manifest some disinclination to talk, or if the interviewed ones talked it was on every topic but the one that was so important. One would be bubbling over with enthusiasm at the splendid manner in which his car had come through. Another bewailed the fact that his car had 'gone back' on him in some unaccountable manner and caused a delay; but when asked for particulars instantly became close mouthed. A third class would unblushingly assign tire troubles or other equally absurd cause for a stop that we may have witnessed ourselves.

"For the first two days, however, we had little to complain of, either from the occupants of the cars or the checkers, timers, etc. By dint of sticking to it and 'jollying' occasionally we got along all right."

"At some places brazen and yet amusing 'jollies' would be given us. East of Springfield we approached a car stopped by the roadside. Notebook and pencil in hand I insinuatingly asked what the trouble was. The operator had been delving into the bowels of the engine, while the observer had his hands full of tools, more of which were scattered around promiscuously.

"'Tire trouble,' was the laconic reply of the loyal observer as he pointed to a cover which was leaned against one of the wheels in a suspiciously ostentatious manner.

"'Yes, tire trouble; can't you see for yourself?' said the operator belligerently, yet with a sly air. 'Just got it pumped up.'

"Plainly there would be 'nothing doing' while I was there, so I gave the word to our chauffeur and we moved on.

"The third day, Saturday, which we expected to yield us the most results in the way of roadside incidents, proved to be singularly barren of them. The run was long, and the roads, or most of them, were bad. Yet few stranded vehicles were encountered. Near Spencer F. A. La Roche was met, and to my question he replied that he had trouble with his piston. Near the same place we came across Dr. Hovestadt and his De Dion, with a couple of broken steering knuckles. The car was partly hidden from sight, and I did not take it to be in the run, and as we were in a hurry to get to the front we did not stop. Afterward I learned that it was the doctor.

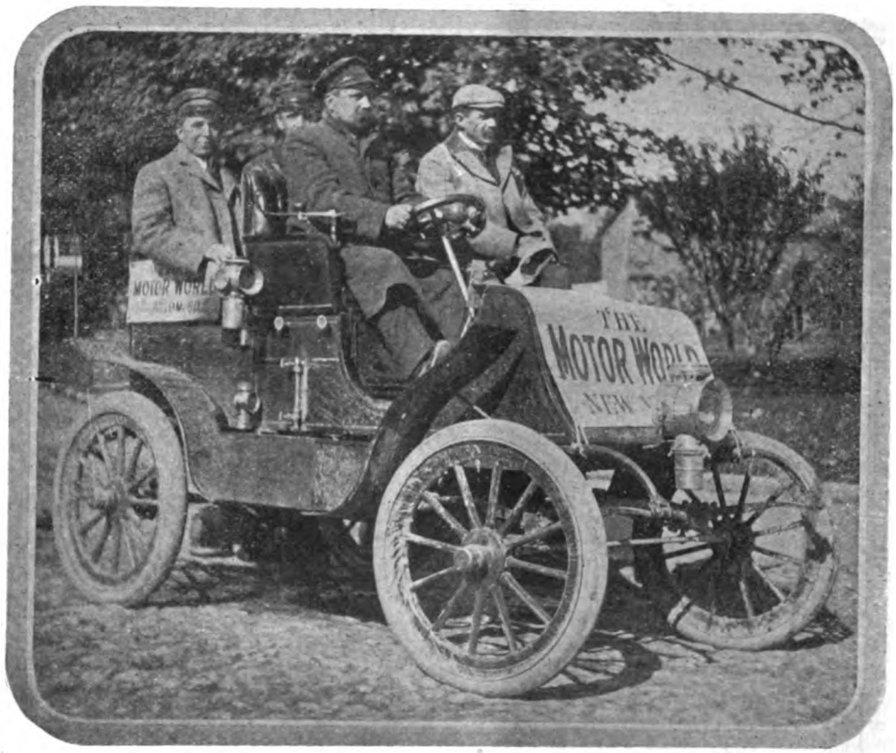
"We got to Foster Hill too late to see the grand mixup there, but just east of that point, where we stopped for water, we heard all about it from the townspeople. They were proud of their hill and the trouble it had caused.

"As we neared Boston we worked our way to the front, but the oncoming darkness and the lack of incident fooled us again. There was a long line of slowly moving cars, slipping and sliding on the mud and stones of Massachusetts and Columbus avenues; but little to interest us.

"With the run half over and all the newness worn off, our labors were considerably lightened. We got our reports of arrivals and departures at controls without trouble, together with such verbal reports as we were able to extract from the observers or operators. The cars that had dropped out, and the cause of that action, were known—all except No. 69. That had gone wrong somewhere west of Worcester; not until the very end of the run did it come out where and why it gave up the ghost.

"At Boston we lost Secretary Butler's able lieutenant, the efficient and accommodating Thayer, who was called back to New York unexpectedly. And because of that came trouble.

"It began at Worcester on the return journey. Perhaps we newspaper men asked too many questions. At any rate, the red capped gentlemen—the checkers and timers



THE MOTOR WORLD CAR IN THE RELIABILITY CONTEST.

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—thought so. At Worcester they were frank enough to tell us so, and asserted that we interfered with them and their work. The charge was denied, of course, but the denial did not seem to carry the weight it should. A few remarks, not exactly of a complimentary nature, were exchanged and then the incident closed.

"At Springfield that night I went over to the Cooley House at about 11:15 to get my daily table of arrivals and departures at the controls. Finding no one there, I went to the Worthy, where the Stevens-Duryea smoker was just beginning.

"By good fortune I located W. M. Turner, who was acting in Thayer's place, and to him I made known my trouble. He hadn't the sheets, but he would get them for me. After waiting about fifteen minutes I went in search of him. He was conversing with some of the other checkers as I came up.

"'Oh, yes, you want the sheets,' he exclaimed. 'Which ones are they?'

"I modestly replied that I wanted all four for that day.

"'Now, let me see. Here are the departures from Boston; that is one. Who has the others?'

"Inquiry developed that they were at the Cooley House, and thither I wended my way in company with a very obliging checker, who confided to me his opinion that an effort was being made to put work on him that did not belong there. The Cooley House was reached and one more sheet procured—that of the arrivals at Springfield—but no others. Word was sent over to the Worthy and Checker Weir appeared.

"'Why, you only wanted these two sheets!' he exclaimed in surprise.

"I assured him that the contrary was the case; that I wanted all four; that I had stated so very plainly, and that I must have them that night. In this, however, I was mistaken.

"'We will get them for you in the morning,' resumed Checker Weir. 'That is the best we can do. The sheets are around somewhere, but I don't know where and can't find out now.'

"By this time it was 1 o'clock in the morning, and this check was the last straw. In my wrath I invoked the majesty of the press, and particularly of the Motor World, and dwelt upon the importance of getting those reports off that night. As this produced no effect, I exclaimed that I was entitled to the information, and that I would have it or report the matter in the morning, lamenting, parenthetically, the absence of Thayer, under whose administration there had never been any trouble. This did seem to arouse my listener. He informed me in round terms that if I 'kicked' less I would get more, and added that it was not compulsory to give me the figures wanted.

"Of course, that ended it for that night. I went without the sheets and swallowed my wrath as best I might.

"But the next day I went to Secretary Butler and was informed that I was entitled to the figures, and he would see that I got them thereafter. Sure enough, Checker Turner took pains at New Haven to assure the newspaper men that he would have the sheets at the Tontine at a certain hour, and any one who wished could make a copy. This promise was kept to the letter.

"Perhaps it was because our Motor World car had become so well known, added to the fact that pretty nearly everybody had become sophisticated, but I was unable to obtain much information on the road as the journey neared an end. Our approach was the signal for clamlike silence.

"'What's the matter?' I called to one observer as we drew near his car.

"'Nothing,' was the derisive reply, while the operator waved a monkey-wrench he had in his hand. Nor did it do any good to stop, for they just waited for us to be gone.

"Stanch, speedy and reliable was the Motor World car, which F. C. Billings, of Hartford, had kindly placed at our disposal. The car had been turned out of the famous Billings & Spencer factory, and was in every way worthy of it. With Chauffeur Johnson at the wheel, it was responsive to our slightest wish, and whether we wished to stay back and watch the ascent of a difficult hill or push on and get in ahead of the first car it was always found equal to the task set it.

Space at Chicago all Sold.

It was officially announced on Tuesday that the Chicago show, which takes place from February 14 to 21, is assured of being a success and that the details of it are about settled. All the space has been sold and there will be about sixty-five exhibitors. The spaces have been laid out and alloted by the special committee appointed for that purpose and the floor plan lacks only the endorsement of the executive committee of the N. A. A. M. When that has been given the diagram will be printed.

The plan for spaces on the main floor of the Coliseum is wholly different from that of last year, with the result that 1,500 square feet of exhibition room has been gained. Last year the spaces were arranged in elliptical shape. This year they are wholly rectangular.

Big and little, the spaces total up 158. There will be three main aisles and the four biggest booths are in the geometrical centre of the floor. These four booths will each comprise eight spaces, with a total of 854 square feet. Each of them has two frontages of sixty-one feet on the main aisles and two of twenty-eight feet on cross aisles. As at present allotted, but subject to change, these principal blocks will be occupied respectively by the Electric Vehicle Company, Olds Motor Works, Locomobile Company and Ralph Temple.

These four exhibitors will be adjoined on the ends by the International Motor Car, Winton Mobile, Berg and Friedman companies, all fronting on the central aisle.

Githins Bros., Chicago, have secured the Oldsmobile agency for that city. Incidentally, the Githens Brothers Co., with $30,000 capital, has been incorporated to take over the business of Githens Bros.

CATECHISING OBSERVERS

Light on Various Matters Asked in Circular Sent out by the A. C. A.

Talk of flaws in the reports made by the observers were rife after the reliability run was completed, but was thought to be largely gossip of which no official cognizance would be taken. The second day after the finish, Friday, it became plain that there were some shortcomings to be looked into and tangles to be straightened out, for on that day the following letter was sent out to all the observers by Secretary S. M. Butler:

"It has come to the knowledge of the Contest Committee that some automobiles in the contest made detours so as to kill time on finding that they were ahead of their scheule, and also that some drivers on hills permitted their automobiles to run backwards while the motor was still going, and then went ahead. If the opertor of the vehicle on which you were an observer did either of these things, the Committee desires to know it and requests that you will answer the questions below so that they may become acquainted with the facts. Kindly reply at once in the enclosed stamped envelope.

"1. Did the driver of the automobile on which you acted as an observer kill time by making detours on finding that he was ahead of his schedule?

"2. Did the driver of the automobile on which you were an observer permit his carriage to run backwards on the hills, keeping the motor running so as to get sufficient speed to mount the hill?

"3. Did the driver at any time leave the schedule route, except at Windsor Locks, where a detour was necessary on account of the road being torn up, and between Worcester and Boston where the arrows had been taken down?"

Answers began to come in rapidly and by Monday afternoon Secretary Butler had an interesting mass of data to lay before the Contest Committee. Most of the observers answered "No," to each of the questions, but the Contest Committee is using quite a lot of information beside that obtained from answers to the circular letter, in determining the nice points of the whole affair.

Concerning the letter, Secretary Butler explained that it was merely a formal request to make sure that none of the operators overlooked such details because of misunderstanding the rules. It was not intended to call into question in any way the honest intet of the observers. It was thought—he said—that all who erred did so through not knowing. As the observers were the official representatives of the club it could not be expected that any outside criticism of their work would be considered by the Contest Committee. To do so would be stultifying the club.

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To Montreal Next Year?

Already, before the results of the 1902 contest have been made known, plans for the 1903 run are being discussed. Convinced by last week's event that a much more severe task must be set, the motor car if its real capabilities are to be brought out, Chairman Scarritt has suggested Montreal as a suitable place for the contest of next autumn.

"A journey to Montreal would not be too much of a task in view of the excellent record made by the machines on the Boston trip. True, it would be a harder trial, but the automobile must prove its stanchness in order to attain the popularity which undoubtedly is in store for it in the future," he said.

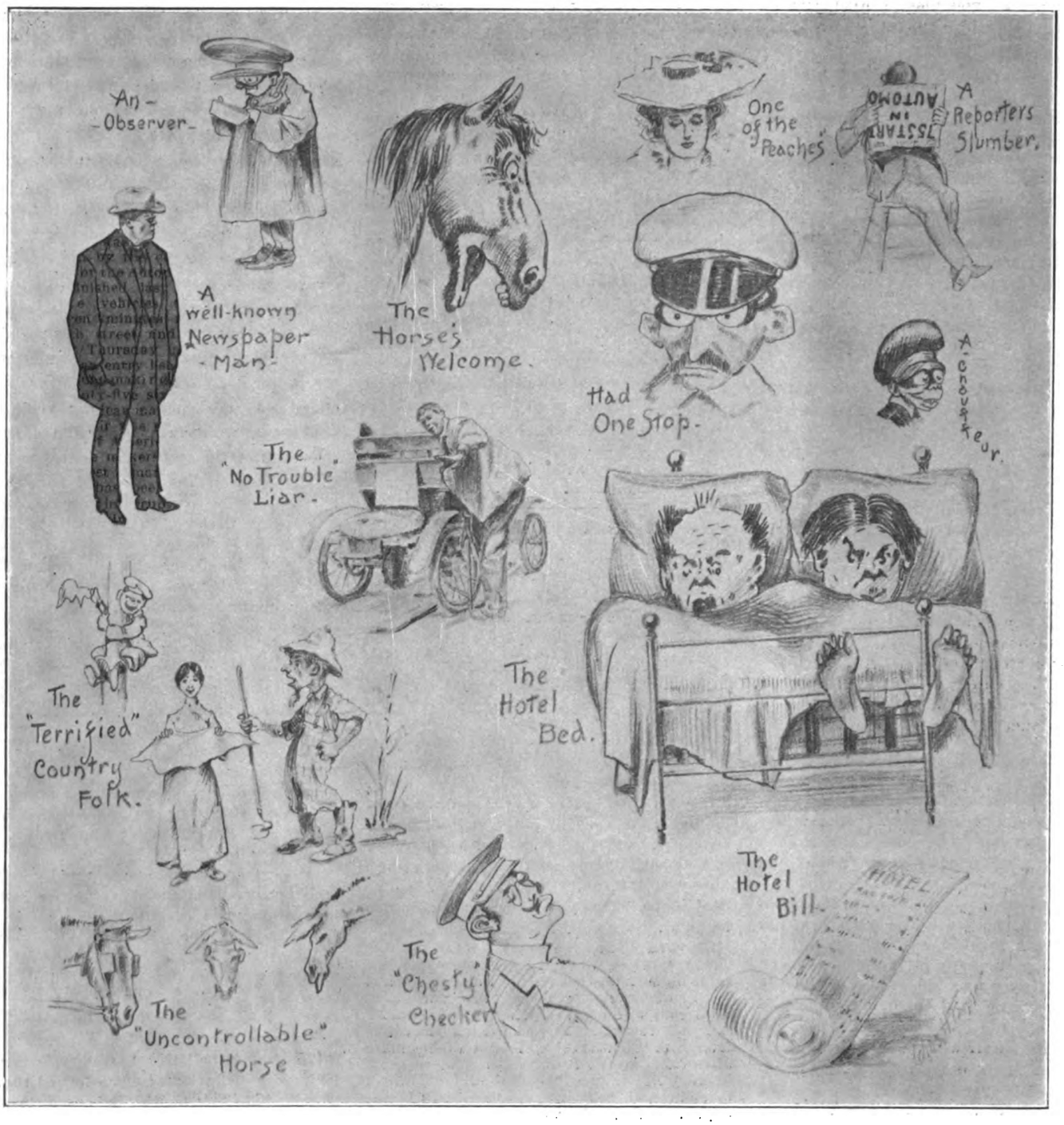
A run to the Canadian metropolis and return would give a total of about 1,400 miles, with roads of a kind that would try very thoroughly the durability of the vehicles. The route followed would parallel the Hudson River to Troy, swerve to Saratoga and go north through Fort Edward and Whitehall, and then continue along the western shores of Lake Champlain to the Canadian border.

The owner of an automobile who is looking for trouble with it can always find the trouble without any trouble.

To be Made in Cincinnati.

Plans are on foot in Cincinnati, O., to form a company to manufacture on an extensive scale automobiles like one designed and recently built by H. W. Sumner, of that city. The car, which was built for Edward Wilbern, can hardly be termed an experiment on the part of Sumner, who made several automobiles last year while in the employ of the Lunkenheimer company that showed excellent qualities in the several automobile meets that were held last fall.

It is said that Sumner has combined all the best ideas in these cars, together with suggestions gained from examining the best French autos, and also added a number of his own improvements in making this trial machine for Wilbern.



SOME IMPRESSIONS OF THE RELIABILITY CONTEST.

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Short Circuits

In a recent French duel the principals and their friends went to the battleground in motor cars.

The American Storage Co., West Sixtieth street, has secured the New York agency for the Baker electric vehicles.

An agency for the sale of White steam cars has been established at 19 Prince's street, Westminster, London.

Starting from Lisbon on Sunday next the first automobile race run in Portugal will be held. The distance will be 130 miles.

The Columbus Buggy Co., Columbus, O., writes to the Motor World stating that they are not manufacturing automobiles at the present time.

A. H. Funke, the wil-known dealer in Kelecom motors, etc., has removed to 325 Broadway, this city, where he will occupy an entire floor.

At the Thirty-eighth street station of the Olds Motor Works, this city, an Oldsmobile, finished with gold, is attracting no small amount of attention.

For the fiscal year Benz & Co., the famous Mannheim (Germany) firm, have declared a dividend of 4 per cent, a decrease of just one-half from the previous year.

It is understood that the Winton Co. during the season just past sold no less than 250 of its touring cars, representing a turnover on this model of $500,000.

Within a month it is expected that the plant of the Overman Automobile Co., now at Chicopee, Mass., will be removed to Bridgeport, Conn., where it will be made a part of the Locomobile plant.

Appreciative participants in the reliability contest have subscribed to a fund which will be used to purchase a testimonial for Secretary Butler of the A. C. A. It will probably take the form of a stop watch.

Handsomely framed copies of the formal guarantee adopted recently by the National Association of Automobile Manufacturers were distributed last week to all the active members of the association, and to such of the associate members as desired them.

Automatic control through the seat is the work of an inventor who has taken out a patent on his device. When the driver of an automobile equipped with the device sits on the seat the engine starts, and when he gets up, "or is accidentally thrown therefrom," the engine is stopped and brake applied. The inventor also provides means of locking the device out of action so that the driver is not absolutely bound to run the engine when his weight is on the seat.

That pushing parts man, A. L. Dyke, St. Louis, Mo., is already in the field with his 1903 calendar. In the centre of the card appears a cut of a car made up of the Dyke No. 1 outfit, and grouped around this are about every motoriety that is on the market.

The much postponed races of the Detroit Automobile Club are set down to be run on Friday and Saturday of this week at the Grosse Pointe track. Already eyes are being cast anxiously in the direction of the sky to see if there is any moisture left there.

THREE JOLLY GOOD FELLOWS.

HARLAN W. WHIPPLE.



JOHN M. HILL. JOHN A. HILL.

Ten automobiles were brought over by the Oceanic, which came into port last week. Alfred De Cordova brought over one, John W. Gates had three cars with him, including a 45 horsepower Mercedes, and Clarence A. Postley brought over an English and a French machine.

Repentant, seemingly, for its abstinence this year, the German Automobile Club will strive to win the Bennett Cup in 1903. It is said that three Mercedes cars will be designated to make the running, and the names of Count Zborowski, M. Jenatzy and Henry Fournier are mentioned as the drivers who will probably take part.

A resort famous for its cuisine and one which had become very popular with automobilists has disappeared. This is the Denville Hotel at Denville, N. J., one of the oldest hostelries of Northern New Jersey, which was consumed by fire last Monday afternoon. On the day before a party of men well known in motor-vehicle circles were entertained at the hotel. They went there in three machines from New oYrk. The party included W. J. Stewart, chairman of the Race Committee of the Automobile Club; Percy Owen, manager of the Winton branch in New York; George B. Adams, of Adams McMurtry; A. J. Wheaton of the New Jersey Automobile Company, and Palen Nelson of New York.

Tighten up nuts carefully in order to avoid overstraining the thread. If small nuts are tightened up with a big spanner the screw is frequently sheared off. A 5-inch spanner is quite large enough to tighten up a ½-inch bolt or nut. For larger nuts add one inch of leverage to every one-eighth inch increase in the diameter of the bolt or nut.

Extra attention to side driving chains is well repaid in their running. They should be frequently removed and well washed in kerosene, dried off and immersed in a bath of melted tallow for about one hour. Keep the tallow just melted, no more. After an hour remove the chains and allow the superfluous tallow to run off.

"Tire Economy" is the apt title which the Goodyear Tire and Rubber Company, Akron, O., give a booklett describing their various styles of tires. Solid, cushion and pneumatic are illustrated and referred to interestingly. Illustrations of Goodyear tires fitted to the wheels of business vehicles, beer trucks, fire apparatus, etc., are also given.

With $150,000 capital, papers of incorporation were drawn up for a new automobile, transportation and transfer company, at La Crosse, Wis. The concern will maintain an automobile livery and operate from the North to the South Side to La Crescent and other suburban points, and will run every ten minutes. The capital will be $150,000. The company will begin business early in the spring.

Emery paper, which is frequently used to clean the porcelain surfaces of sparking plugs, has the disadvantage of scratching the surface, which then collects and holds dirt more readily. A better method is said to be to brush the end of the porcelain with hydrochloric acid and then wash it with water, which process is said to restore the surface perfectly. The acid may be obtained at any drug store.

A handsome new Rocket-Schneider of the latest tonneau pattern was imported last week by Albert Heidelbach of New York, and stored at the Barry & Hayes garage, 35 East Fifty-eighth street. It was taken out for the first time Wednesday by Mr. Heidelbach's chauffeur, Rudolph Meyer, who was in the car with James Matthews, who was killed by his car plunging over an embankment in New Jersey recently. Meyer jumped out of the Mathews car just before it plunged. The new Rocket-Schneider has a four-cylinder engine of 16 indicated horse power.

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THE CASUALTIES OF THE WEEK

RAILROADS {Killed, 105. Injured, 109. **TROLLEYS** {Killed, 13. Injured, 90. **HORSES** {Killed, 5. Injured, 106. **BICYCLES** {Killed, 0. Injured, 24. **AUTOMOBILES** {Killed, 0. Injured, 2.

TOTAL, THIS WEEK: KILLED, 123; INJURED, 331. TOTAL, FOUR WEEKS: KILLED, 375; INJURED, 801.

PRIOR TO OCTOBER 14.

Corsicana, Tex.—Dennis Coughlin, killed by train.
Hawarden, Ia.—Railway collision; one injured.
Pittsfield, Mass.—Henry Newton, Jr., injured by being thrown from wagon.
Ellicottville, N. Y.—Railroad wreck; fireman killed, engineer injured.
Webster City, Ia.—Train ditched; two trainmen injured.
Fremont, Neb.—Fourteen-year-old boy injured by train.
Englewood, Kan.—Railroad wreck; trainmen injured.
Vicksburg, Miss.—Dick Andrews killed by train.
Lucas, O.—Conductor injured in railroad wreck; may die.
Tyrone, Pa.—Bertrand Young, killed by train.
Canastota, N. Y.—Warren Hatmaker, killed by train
Birmingham, Ala.—L. P. Porter, probably fatally injured by train.
Bean Lake, Mo.—Manney Downey, killed by train.
Harlem, Kan.—Four trainmen injured in collision.
Hulton, N. Y.—Thomas Stewart, killed by train.
Spokane, Wash.—Charles Anderson, cyclist, killed by train.
Omaha, Neb.—C. C. King, injured in runaway accident.
Manning, Wis.—Robert Hodgen, injured by train.
St. Louis, Mo.—Three injured in collision of trolley and wagon.
Memphis, Tenn.—Engineer Broughton, killed in collision.
Manito, Ill.—Collision. One dead; two injured.
Nashville, Tenn.—L. A. Cox, injured by trolley car.
Toledo, O.—Twelve-year-old boy injured by train.
St. Joseph, Mo.—F. M. Cropp, injured by train.
Bristol, Tenn.—James Crockett, Sr., killed by train.
Far Rockaway, N. Y.—William Kaiser (6) run over by bicycle; scalp wound.
Big Rapids, Mich.—Alexander Young (12) seriously injured in runaway.
Lester, Wash.—Railroad wreck; Engineer Mischo killed; fireman injured.
Wilson, N. C.—Little boy seriously injured by bicycle.
Seguin, Tex.—Negro injured in railroad wreck.
El Paso, Tex.—Antonio Martinez, killed by train.
Gardner, Ill.—Reece W. Beam, killed by train.
San Rafael, Cal.—Tunnel caved in on work train; one dead, one dying, and several injured.
Fitchburg, Mass.—Luther Jackson, injured by train.
Indianapolis, Ind.—Fred Ward, cyclist, injured by car.
Lawrence, Mass.—Jennie Knowles (3) injured by wagon.
Gloucester, Mass.—Allan Parsons, struck by horse.
Lynn, Mass.—Jennie Rousseau (4) run over by wagon; died.
Brockton, Mass.—Two injured in runaway accident.
Olneyville, R. I.—One injured in runaway.
Hoosick Junction, Vt.—Isaac Madison, killed by train.
Olean, N. Y.—Collision; three injured.
Syracuse, N. Y.—John Conway, injured by train.
Buffalo, N. Y.—Olive Shenk (9) injured by car.
Menominee, Mich.—Man killed by train.
Cleveland, O.—Theo. Vatilo, injured by train; may die.
Norwich, N. Y.—Miss May Evans, thrown out of carriage and injured by collision with heavy wagon.
Merchantville, N. J.—John Reed, killed by train.
Manchester, N. H.—James Grady, injured by bicyclists.
South Harpswill, Me.—Lydia Stover (10) injured by wagon.
Randolph, Vt.—A. J. Kelly injured by bicycle.
Plymouth, Mass.—Miss Holmes, injured by train.
Weymouth, Mass.—Henry Cleary, injured by train.
W. Newton, Mass.—Edmund Huston, cyclist, injured by cab.
Haverhill, Mass.—Arthur C. Fuller, injured by train.
Lafayette, Ind.—Thomas Ryan, killed by train.
Rochester N. Y.—Wm. V. Punch, killed by train.
Tamaqua, Pa.—Harry Davis, killed by train.
Worcester, Mass.—John O'Donnell, injured by trolley; may die.
Toronto, Ont.—Wreck; two trainmen injured.
Chicago, Ill.—Michael Hartman, probably fatally injured by cable car.
Conlin, Mont.—Train ditched; two or three injured.
Ouray, Col.—Wreck; one killed; two injured.
Morrisburg, Ont.—Edw. Gibbons, killed by fall from wagon.
Detroit, Mich.—Adolph Baker, injured by car.
Fall River, Mass.—Mary Marcotte (9), killed by train.
Pittsburg, Pa.— Charles K. Bryce, seriously injured by train.
Chariton, Ia.—George Wilson (9), seriously injured by train.
St. Louis, Mo.—Willie Nolan (12), killed by trolley car.
St. Louis, Mo.—Mrs. Mary McLelland, injured by wagon.
Zanesville, O.—Jas. E. Robinson, killed by train.
Seattle, Wash.—John Parson, injured by trolley car.
Atlanta, Ga.—Two injured in collision of carriage and car.
Sonora, O.—John Crowly, injured by train; may die.
Soringfield, Ill.—Samuel George, killed by train.
Toledo, O.—Fred Mayburger, injured on railroad; may die.
Brenham, Tex.—Miss Minnie Nolte, seriously injured in runaway.
Wagoner, Indian Ter.—Two injured in railroad wreck.
New Orleans, La.—Alma Blair, killed by train.
Otway, Ohio.—Ed. Montgomery killed and John Leeth fatally injured by runaway engine.
Portsmouth, O.—Two badly injured in runaway.
Indianapolis, Ind.—Collision; three injured.
Mount Vernon, Ind.—Otto Campbell (5), killed by train
Lewis Center, O.—Runaway; two injured.
Wabash, Ind.—William Hopkins, killed by train.
Cuba, Mo.—Mrs. Wm. Oliver, killed by train.
Fond du Lac, Wis.—Pat. Gannon, injured by engine.
Manito, Ill.—Fred Grover, probably fatally injured by train.
Chicago, Ill.—Martha Laeser (8), killed by ice wagon.
Evansville, Ind.—Three-year-old child fatally injured by car.
Indianapolis, Ind.—J. F. Reeder, injured by train.
Elmira, N. Y.—Runaway; three injured.
Pittsfield, Mass.—Thomas Mercur, probably fatally injured by train.
Paterson, N. J.—Collision of trolley and wagon; driver seriously injured.
Newark, N. J.—Charles Nussbaum, injured by collision with trolley.
Lowell, Mass.—Car struck truck; passenger injured.
Fall River, Mass.—Four thrown from carriage; one seriously injured.
Worcester, Mass.—Thomas McGillicuddy, injured by being thrown from wagon.
Haddam, Conn.—Frank Platt, killed by train.
Providence, R. I.—Edward Kennedy, injured by train.
Providence, R. I.—Trolley struck ash cart; driver injured.
Bowling Green, O.—Runaway; one injured.
Franklinville, Pa.—Salvatore Galelo, killed by train.
Providence, R. I.—J. W. Ross, injured by trolley striking his carriage.
Everett, Wash.—John Robinson, killed by train.
Rome, Ga.—Mrs. W. A. Dodge, seriously injured by fall from trolley.
New Castle, Pa.—J. G. Moore, perhaps fatally injured in runaway.
W. Hoboken, N. J.—Four injured in runaway.
Altoona, Pa.—Wm. J. Smith and Thos. Watson killed in railroad yard.
Conway, Pa.—James Slack, killed by train
Mifflin, Pa.—Collision; C. B. Rich killed; five injured.
Pittsburg, Pa.—Francis Broderick (7), seriously injured by engine.
Sharon, Pa.—David Adams, badly injured by car.
Natrona, Pa.—A. Mann, killed by train.
Savannah, Ga.—L. M. Laramore, killed by engine.
Savannah, Ga.—Edward Tison, fell from horse; broken leg.
Savannah, Ga.—Runaway; three injured.
Birmingham, Ala.—Two injured in runaway.
Sherman, Tex.—Leon Anderson, killed by train.
Glasgow, Ky.—S. H. Waller, injured in runaway.
Prairie Plains, Tenn.—H. House, injured by fall from horse.
Chickamauga, O.—Robert Waddell, injured by colt.
Keokuk, Ia.—Helen Browning (18 months), killed by trolley.
Centerville, Ia.—Three trainmen injured in wreck.
Mulliken, Mich.—Cornelius Wallington, perhaps fatally injured by train.
Richmond, Va.—Two injured in trolley accident.
Spencer, Mass.—John E. O'Donnell, killed by trolley.
Marquette, Mich.—Howard Osgood, killed by train.
Bridgeport, Pa.—Two injured in trolley accident.
Vanclevesville, W. Va.—Clarence Macaboy, killed by engine.
Pittsburg, Pa.—Conductor injured in trolley collision.
Ballville, O.—Ambrose Flint, hurt in runaway.
Kenton, O.—Dr. W. H. Gage, cyclist, injured by wagon.
Sandusky, O.—Samuel F. Newman, killed by engine.
Cleveland, O.—Wm. Pytel, injured in runaway.
Columbus, Ind.—Three injured in runaway.
Goshen, Ind.—H. E. Smith, cyclist, injured by colliding with team.
Lafayette, Ind.—George Braun, killed in runaway.
Rensselaer, Ind.—Joseph Devereux, injured by train.
Indianapolis, Ind.—Frank Connors, injured by train.
Indianapolis, Ind.—George Wrennick, injured by train.
Lapeer, Mich.—Two injured in collision.
Menominee, Mich.—Unknown man killed by train.
Reedsburg, Wis.—Peter Vosen (10), fell from horse; may die.
Blacksburg, S. C.—Nine-year-old girl killed by train.
Johnstown, Pa.—Mrs. Marion Santaj, killed by train.
Zanesville, O.—Clyde Gildow, killed by train.
Thompson, Utah.—Three deserting soldiers killed by train.
Aurora, W. Va.—David Coulthart, knocked from engine; may die.
Chicago, Ill.—D. B. Phalen, killed by train.
Biddeford, Me.—Philip Dion, injured by fall from bicycle.
Pittsfield, Mass.—G. Baker, injured by fall from cart.
Melrose, Mass.—Elverdo Berry (4),, injured by wagon.
Tupper Lake, N. Y.—John Lajump, killed by train.
Pittsfield, Mass.—Frank Mastroluco, killed by engine.
Pawtucket, R. I.—Two-year-old boy injured by wagon.
North Adams, Mass.—Dominick Fisher, injured in runaway.
Fairport, Conn.—Daniel Ryan, killed in runaway.
Poughkeepsie, N. Y.—Mrs. Moore, injured in runaway.
Clyde, N. Y.—Carriage collision; Solomon Cushman injured.
Catskill, N. Y.—Charles Snow, killed by train.
Buffalo, N. Y.—Thomas Burns, struck by trolley car; died from injuries.
Toronto, Ont.—Mrs. Jane Cleghorn, fatally injured by car.
Hyde Park Mass.—Trolley struck wagon; Mrs. John Crosby injured.
Riverside, Mass.—H. L. Griswold, killed by train.
Springfield, Mass.—Mills E. Wilcox, injured in runaway.
Springfield, Mass.—Patrick Kelliher, injured by trolley.
Springfield, Mass.—Three killed by train.
Holyoke, Mass.—Alice Doran, injured in alighting from trolley.
Hopedale, Mass.—J. A. Boates, injured by train.

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Stoughton, Mass.—Frank Healy (7), injured by horse.
Woodbury, Conn.—Mrs. S. H. Steele, injured in collision of truck and carriage.
Marlboro, Mass.—Several injured in trolley collision.
Boston, Mass.—Patrick Sherlock, cyclist, injured by runaway horse.
Seymour, Conn.—S. W. Buckingham, injured in wagon collision.
Providence, R. I.—M. W. Overton, injured by moving van.
Pawtucket, R. I.—Car collided with wagon; Thomas Badley injured.
Van Buren, N. Y.—Unknown man killed.
Albany, N. Y.—Car struck wagon; William Foster injured.
Buffalo, N. Y.—Joseph Rupp, killed by car striking wagon.
Green Island, N. Y.—John Molloy, killed by engine.
Glens Falls, N. Y.—Bicycle collision; Clifford Poutre injured.
Rahway, N. J.—Morris Barney, fatally injured by train.
Hawthorne, N. J.—Thomas O'Neill, killed by train.
New York.—Alexander Savage, injured in runaway.
So. Coventry, Conn.—Thomas Mullen, killed by train.
Hackensack, N. J.—James Gilkinson, injured by fall from train.
Camden, N. J.—Samuel Behrman, fataaly injured, and Charles Young hurt while riding on top of train.
Wilmington, Del.—Alexander Bordley, killed by train.
Lancaster, Pa.—Thomas Ryan, killed by train.
Carlisle, Pa.—James Jackson, injured by horse.
York, Pa.—Gottlieb Waldmeyer, killed by train.
Chester, Pa.—Car struck wagon; Joseph Cooper injured.
Van Enman, Pa.—Four killed, one injured in wreck.
Coatesville, Pa.—Boy injured by wagon.
Johnstown, Pa.—Three injured in runaway.
Pittsburg, Pa.—Thos. Stewart, killed by train.
Stroudsburg, Pa.—Wilbur Fletcher, injured by train.
West Bellevue, Pa.—John Wilson, killed by train.
Augusta, Ga.—J. A. Henry, cyclist, injured by buggy.
Rochester, N. Y.—B. J. Fitzsimmons, injured by fall from bicycle.
Rochester, N. Y.—Miss Florence Ades, injured by fall from bicycle.
Waynesboro Junction, W. Va.—Samuel F. Wilkinson, killed by engine.
Baltimore, O.—Chas. C. Johnson, struck by train; may die.
Geneva, Ont.—Margaret Gallagher (7), perhaps fatally injured by trolley.
Chicago, Ill.—Frederick W. Coan, killed by car.
New Bedford, Mass.—Trolley struck wagon; John B. Gilnot injured.
Elizabeth, N. J.—Car struck wagon; Mr. Meyer injured.
Amesbury, Mass.—Trolley accident; several injured, one seriously.
Concord, N. H.—Orrin T. Sargent, killed on train.
Nashua, N. H.—Charles Lapham, injured by fall from bicycle.
Toronto, Ont.—Charles Crosby (15), injured by fall from wheel.
West Chester, Pa.—Chas. J. Pennock, injured by fall from carriage.
Montreal, Que.—Joseph Archambault, injured by cab.
South Byron, N. Y.—James Barr, killed by train.
Providence, R. I.—Arthur Peck, injured by fall from bicycle.
Providence, R. I.—George Shierson, injured while alighting from trolley.
Union, N. Y.—John J. O'Connell, killed by train.
New York.—Collision of trolley and horse car; Driver McCoy injured.
Youngstown, O.—Michael Hogan, killed by train.
Boston, Mass.—Two or three injured in trolley collision.
New York.—Jacob C. Van Pelt, injured by trolley.
Wilmington, Del.—John Mullin, injured by train.
Alexandria, Ind.—Mortimer Miller and wife injured in runaway.
Trenton, N. J.—D. H. Hetherington, killed by train.
Newark, N. J.—Two injured in railroad accident.
Little Falls, N. Y.—Bartholomew Fogarty, killed by cars.
Batavia, N. Y.—Walter Greening, injured by train.
Norwalk, O.—Samuel F. Newman, killed by train.
Columbus, O.—Hazel Seeds, injured by car.
Passaic, N. J.—John Stowe, injured by fal from wheel.
Elizabeth, N. J.—E. M. Wells, injured in trolley accident.
Cleveland, O.—Ida Fried (4), killed by car.
Indianapolis, Ind.—David and Mary Mescall injured by runaway horse.
Shelton, Que.—Boy injured in runaway.
Buffalo, N. Y.—Mrs. M. M. Martin, injured by trolley.
Rochester, N. Y.—Car struck carriage; Michael Grenich injured.
Pittsburg, Pa.—Thomas McCabe, injured by train.
Pittsburg, Pa.—Mrs. Eliza J. Shaffer, struck by trolley car.
Birmingham, Ala.—D. Y. Lowe, crushed to death between cars.
Rochester, N. Y.—Michael Tracey, injured by motor cycle.
Brandon, Vt.—Three injured in runaway.
Newport, O.—Earl Tattershall (12), injured by train.
Youngstown, O.—Hammond Mumford, killed by car.
Cleveland, O.—Wm. Slavin (8), killed by trolley.
Sharon, Pa.—A. H. Stafford, perhaps fatally injured by train.
Louisville, Ky.—John Welsh (8), killed by train.
Fountain, Minn.—Floyd Case, killed in railroad wreck.
St. Louis, Mo.—Noah T. Pritchard, cyclist, injured by car.
St. Louis, Mo.—Mr. D. A. Boyd, injured while alighting from car.
Davenport, Ia.—James Metzger, injured by horse.

OCTOBER 14.

New Marlboro, Mass.—Frank Royce, injured by fall from bicycle.
Albany, N. Y.—Dominic Lanahan, injured in runaway.
Elmira, N. Y.—Clarence L. Strong, killed on railroad.
West Hoboken, N. J.—Four injured in runaway.
Oneida, N. Y.—Wm. White, killed by engine.
Chester, Pa.—Three injured in runaway.
Lebanon, Pa.—John Albright, injured by fall from wagon.
New York.—Two injured in runaway.
Youngstown, O.—Harry Patterson, injured in runaway.
Jersey City, N. J.—Mary Kivlin, injured by trolley.
Philadelphia, Pa.—Dominico Piro (9), killed by trolley.
Philadelphia, Pa.—Unknown woman killed by trolley.
New Albany, Ind.—Mr. Louis Weber, injured in runaway.
Chicago, Ill.—Jesse Richie, killed by train.
Yonkers, N. Y.—One injured in collision.
Goffstown, N. H.—Trolley struck carriage; Mrs. Mary Whipple hurt.
Fitchburg, Mass.—Harry E. Kingsbury, injured on railroad.
New York.—Unknown man killed by train.
New York.—Chas. S. Fairchild, injured by trolley.
New York.—Collision of trolley and fire truck; several passengers hurt.
Williamsburg, N. Y.—Stephen Zeuner, injured by fall from wagon.
Smithtown Branch, L. I.—Train struck carriage; C. W. Darling injured.
Middletown, Conn.—Two bicyclists injured in collision.
Olneyville, R. I.—One injured in runaway.
Providence, R. I.—Charles Peck, injured in runaway.
Newport, O.—George Shaw, injured in runaway.
Harrisburg, Pa.—Robert Smith, injured in runaway.
York, Pa.—Child injured by bicyclist.
New Bedford, Mass.—Car struck express wagon; Wm. Wilson injured.
Holyoke, Mass.—Louis Triveau, injured on railroad.
Philadelphia, Pa.—Catharine Condon, injured by trolley.
Philadelphia, Pa.—Unknown woman killed by train.
Elmira, N. Y.—Fred Herman, injured by train.

OCTOBER 15.

Providence, R. I.—George Cox (8), run over by carriage; killed.
Rochester, N. Y.—Oswald Steinwachs, injured by fall from bicycle.
Kingston, N. Y.—Conrad Erne (5), killed by flat car.
West Springfield, Mass.—Trolley struck wagon; George Taylor injured.
South Boston, Mass.—David Dillon, injured by horse.
South Boston, Mass.—Maurice Gallivan (3), injured by buggy.
South Boston, Mass.—Mary Reagan, injured by wagon.
Medford, Mass.—Lucy F. Sanderson, injured by bicyclist.
Plymouth, Wis.—Mrs. Gertrude Hennes, killed by train.
Fulton, N. Y.—Wreck; five injured.
Lexington, Ky.—Mrs. Hall, injured in collision of trolley and train.
Zanesville, O.—Guy Smith, killed by train.
Toronto, Ont.—Five-year-old boy injured by team.
Pittsfield, Mass.—Francis McGinty, injured by wagon.
Norristown, Pa.—John L. Burkert, injured by fall from carriage.
New Haven, Conn.—James G. Ward, injured by trolley.
Hartford, Conn.—James McClelland, killed by train.
Bristol, Conn.—George Warfield, injured by train.
Atlantic City, N. J.—Collision; one injured.
Blairsville, Pa.—T. B. Rager, injured by train.
Erie, Pa.—George Auffinger (4), kicked by horse.
Harrisburg, Pa.—William Harris, killed by train.
Philadelphia, Pa.—James Moore, jumped from train; died.
Cincinnati, O.—Patrick Tully, killed by train.
Reelsville, Ind.—Railroad wreck; two killed and several injured.
Chicago, Ill.—Julius Spooler, killed by train.
Davenport, Ia.—Railroad collision; one injured.
Bethlehem, Pa.—Augustus Ungerer, injured in runaway.
Red Cliff, Col.—Collision; one killed and one injured.
Buffalo, N. Y.—John Levinger, injured by train.

OCTOBER 16.

Brooklyn, N. Y.—Robert S. Darbee, thrown from trolley; seriously injured.
Waltham, Mass.—W. W. Brown, injured by fall from bicycle.
Boston, Mass.—George A. Livingstone, injured by fall from bicycle.
Hicksville, Long Island—Obadiah B. Smith, killed by train.
Northampton, Mass.—Trolley collision; motorman injured.
Jamaica Plain, Mass.—Two injured in runaway.
Pittston, Pa.—Thomas Golden, killed by engine.
Mansfield, O.—Mrs. Maffett, injured in runaway.
Lancaster, Pa.—Mrs. Mary Glacklin, injured in runaway; may die.
Allentown, Pa.—William H. Musselman, killed by train.
Merion, Pa.—Mrs. Cornman, injured by fall from carriage.
Port Jervis, N. Y.—Charles Luke, killed by train.
South Manchester, Conn.—Burdette Dickinson, injured by fall from bicycle.
New York—Automobile and trolley collision; three injured.

OCTOBER 17.

New York—Trolley collision; two injured.
Bath Beach, N. Y.—Jacob Yuengling, struck by train; may die.
Lynn, Mass—Thomas Baker, killed by train.
Corona, Long Island—Mrs. Pauline Comstock, killed by train.
Brooklyn, N. Y.—Charles Sandburg, killed by train.
Brooklyn, N. Y.—Trolley collided with flatcar; two injured.
Philadelphia, Pa.—Train struck wagon; John Cunningham injured.
Chester, Pa.—John Brown, fatally injured by trolley.
Boston, Mass.—Jacob Ferkelsky (12), injured by train.
Boston, Mass.—William Q. Bartlett, injured by fall from bicycle.

OCTOBER 18.

New York—Trolley car struck carriage; Mrs. Mabley injured.

OCTOBER 19.

West Roxbury, Mass.—W. M. Mullen, injured by fall from bicycle; may die.
Carlisle, Pa.—Six injured in trolley accident; some may die.

AUTOMOBILES.

OCTOBER 14.

South Norwalk, Conn.—Automobile collided with bicycle; cyclist slightly injured.

OCTOBER 16.

New York, N. Y.—Automobile knocked down several boys, slightly injuring one.

Consider New York-Chicago Run.

A meeting of the Executive Committee of the National Association of Automobile Manufacturers was held on Tuesday. The American Charron, Girardot and Voigt Company and the Elmore Manufacturing Company were elected to membership. A proposition to co-operate with the Automobile Club of America and the Automobile Club of Chicago in holding a run from New York to Chicago resulted in the adoption of a resolution directing the secretary to inquire into the feasibility of such a run being conducted and report back on ways and means.

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How his Chances Were Ruined.

"Well, I got that man in New York, and you may rest assured I shall leave him there," was the savage remark of L. D. Fisk, of Hartford, at Norwalk on Wednesday of last week.

For five and almost one-half days that keen sportsman had sped along in high spirits. A clean score was claimed by him, and the claim was supported by his observer, and he already had in anticipation one of the cups in his possession. But it was not to be. Just before reaching Norwalk on Wednesday he was obliged to stop and repair a pump which had been giving trouble.

"I told my man to fix that at New Haven last night," he exclaimed irately, "and supposed he had done so. But he preferred to go off and have a good time, with this result. Here is the week's work gone for nothing and without a particle of excuse for it. It wont' take me long to ship him when I get in."

Referred to Law Committee.

That curious Philadelphia speed ordinance—curious because it was drafted in part by automobilists—has been introduced in Select Council and referred to the law committee for consideration. As was stated last week, it places the speed of automobiles at 10 miles an hour, and provides a penalty of $25 for the first violation and a revocation of the license of the owner for a second.

Adams & McMurtry Dissolve.

On Saturday last the firm of Adams & McMurtry passed out of existence. Mr. McMurtry has not been actively connected with the concern for some little time, and it is understood that his interest has been acquired by the Ohio Automobile Company, for which the firm were agents. Mr. Adams will probably continue in charge as manager for the Ohio company.

New B & S Forgings.

Automobile forgings kept in stock are described in a new catalogue just issued by the Billings & Spencer Co., Hartford, Conn. Among them are several entirely new pieces. One of these is a steering knuckle for road wagons, No. C-370; a front axle and steering knuckle for heavy vehicles, Nos. A-252 and A-253, respectively; two styles of rear axles for heavy vehicles, Nos. A-254 and A-255, and a set of forgings consisting of a front axle, centre and perch stub, designed to go with Nos. A-252 and A-253, respectively. These and other parts manufactured by the famous firm are described and shown in detail.

The Week's Exports.

British East India—10 cases auto vehicles and material, $2,440.

British Possessons in Africa—12 cases motor vehicles and parts, $9,076.

Cuba—1 case auto vehicles, $126.

London—30 cases auto vehicles and parts, $25,647.

Lisbon—1 case auto vehicles, $976.

Has Consented to Serve Again.

Had President A. R. Shattuck of the Automobile Club of America desired a vindication of his administration he could not have discovered a better way of obtaining it than by declining, as he did, a re-election. It was then seen how difficult it would be to fill his place. Many names were suggested, but one by one they were passed by, declinations accounting for some, lack of availability for others.

In the end Mr. Shattuck was asked to rescind his decision not to accept the office again. This he has at last consented to do. The nominating committee and the membership at large received his consent with genuine pleasure, and the principal part of the committee's labors has been performed. It is practically assured that there will be no opposition to Mr. Shattuck's candidacy, a result unquestionably due to his arduous and unselfish labors for the club and automobilists in general.



ONE DAY'S SHIPMENT OF OLDSMOBILES.

Cash and Glory Both Gone.

"Well, there goes $40 in cold cash," exclaimed the driver of a car in the reliability contest ruefully as he started to examine a spark plug which proved to be defective. "The boss told me that if I captured one of those cups he would give me that sum of money. My mate was made the same offer, and here we are both out of the running. It's tough luck, I tell you," and he turned to the Motor World man for the sympathy that was not withheld.

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THE

STEVENS-DURYEA

GASOLENE AUTOMOBILE

Was the First Machine to Reach the New York Control.

WE ENTERED TWO MACHINES IN THE RELIABILITY RUN AND EACH ONE ARRIVED ON TIME.



WE DEMONSTRATED THAT OUR MACHINES HAVE RELIABILITY, SPEED, AND ARE GREAT ON HILL CLIMBING.

The Entire 500 Mile Run was Made Without the Adjustment of Any Part or Addition of Water for Cooling.

They are equipped with an 8 horse-power, two-cylinder engine and start from the seat and can easily be operated by a lady. It is also noiseless. This will be the popular carriage for 1903.

WEIGHS 1050 POUNDS. PRICE, F.O.B. FACTORY, $1200.00.

WE WANT ONLY RELIABLE DEALERS FOR AGENTS. *SEND FOR OUR CATALOG.*

J. STEVENS ARMS & TOOL CO., No. 690 Main Street

CHICOPEE FALLS, MASS.

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Broke the Record

A **Winton Touring Car,** on Oct. 15th, ran the 250 mile course between Boston and New York in the remarkable record time of less than 12 hours. The car won a perfect score and had the advantage of complete check by the control officials of the Automobile Club of America's New York-Boston-New York reliability run.

THE PERFORMANCE CLIPPED 6 HOURS FROM THE PREVIOUS BEST RECORD.

This car, owned by Mr. H. D. Corey, the well known Boston banker, had just been released from the customs after completing a several thousand miles successful tour upon the European continent. It was a 15-h. p. car with standard 1902 equipment throughout.

The new **Winton Touring Car** will have a 20-h. p. motor and many other improvements which will insure its position upon the topmost round of the automobile ladder.

THE WINTON MOTOR CARRIAGE CO.,

FACTORY AND GENERAL OFFICES

CLEVELAND, OHIO., U. S. A.

BRANCHES

NEW YORK CHICAGO BOSTON PHILADELPHIA

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NOT UTILITARIAN ONLY

But Ornamental as Well, is This Abiding Place for Motor Cars.

In contradistinction to a horse stable, an automobile house can always be made attractive. There are no sanitary devices that need to be put in for the purpose of rendering the place bearable, as there would be if horses were kept in it. Consequently its proximity to the house is an advantage rather than a drawback.

In the accompanying illusgtration it will be seen how successful the owner has been in making his "garage" ornamental as well as useful.



GARAGE WITH PERGOLA.

The first shows the veranda of the house fronting the lawn. There is a seat provided, sheltered by the roof; two barrels collect the surface water, very handy for washing purposes. The whole of the gable and the top part of the gates are of glass; the house derives further light from the window (of light green shaded glass) in the veranda and a window of similar dimensions at the opposite side of the house, so that there is no lack of light within.

The second photograph shows the interior. The size being 15 by 12 feet, there is ample room for two good sized cars, and sufficient space for a passage both in the middle and at each side.

The small door open at the left end of the house leads into a small dark room (3 by 3 feet) with a small window (18 by 10 inches) with both ordinary and red glass, to be used as occasion requires. To the right there is a repairer's bench let into the wall (7 by 1¾ feet), with all the various accessories. The dark square visible underneath the small car to the right is the cover of the pit (4½ by 2 feet by 4 feet deep. On the top there is a commodious loft (with curtain in front), holding a store of necessaries and at the same time useful as a box room.

The third photograph shows the back of the house with the window of the repair room (15½ by 8 feet) fitted up as a convenient residence for same. There still remains to mention that there is a pavement laid from the gates of the stable to the sidewalk in garden with a slight fall to the latter.

A further addition is now in course of construction in the shape of a glass covered way of 12 feet from the stable gates and along the paved way to enable washing outdoors in unfavorable weather and to afford temporary shelter to friends' cars. The roof of this covered way will rest on four wooden pillars (two on each side) sunk into the ground, and in order to conform with the garden surroundings, will be covered by plants to form a pergola.

Efficacious and Lasting.

More than a year ago a piece of road on the outskirts of a large town, some 300 superficial yards long, was sprinkled with crude petroleum, allowing one gallon to each ten superficial yards.

The season was very dry, but it was found that the one application, costing about one cent a square yard, sufficed to lay the dust, and no further sprinkling of oil or water was necessary during the whole of the summer.

TIRE CONSIDERATIONS

For Good of All Should They be Penalized in Endurance Contests?

Taken as a whole, the New York to Boston and return reliability contest, which ended in this city yesterday, showed comparatively few constructional failures that will give cause for penalty marks even in the aggregate. That this is true it is somewhat trite to say that the manufacturers are to be congratulated, as words of praise are pouring in on them from all sides.

From all reports, however, it can be counted as one of the favoring clauses of the rules that points were not counted against the participants because of tire troubles, as these seem to have been more than ordinarily frequent. The statement has been made by one who followed the matter closely that if all the stops of every kind, penalized and non-penalized, were taken into consideration, tire troubles, chiefly punctures, would show up for seventy-five per cent.

Whether these were from inherent causes or because of peculiar road conditions evidences are not clearly at hand to determine, but that there is a tendency in some quarters to use the light tires seems reasonable in consideration of a recent experience of a Motor World representative. While in a tire establishment there came a telephone call asking for the price on 3-inch tires. A return inquiry developed that the prospective buyer wanted the tires for a 1,600-pound vehicle, when he was told that four-inch tires were the smallest that the tire maker would recommend or care to supply for the vehicle in question.

It is the important feature of the incident that the prospective buyer purchased the four-inch tires, proving that tire makers and dealers have but to take the proper stand with their customers, when if too light tires are being used, and it has been our experience in two or three instances that such was the case, some tire complaints will be eliminated from the woes of the makers.

Bearing on this subject was the rule in the recent reliability trials held in England, which counted in punctures as penalties. Because of this rule those entering their vehicles generally equipped them with heavier tires than they did in the trials of the year before, with the result that tire troubles were far less frequent. It was the contention of some that tires should not be penalized, but the answer was given that vehicles had been using too small pneumatics and that the rule would prove this. Every evidence bears out the contention.

Resin Too Positive.

A greasy clutch leather should be well dressed with powdered chalk or fuller's earth. Either substance soaks up the oil and admits of a good grip being obtained. Resin on a clutch only causes it to grip fiercely, and eventually ruins the leather. The best leather dressing is cotton, or castor oil.

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THE NEW WINTON

BEYOND QUESTION THE MOST LUXURIOUS AND COMPLETE HIGH-GRADE AUTOMOBILE EVER MANUFACTURED IN AMERICA.

It will be in the hands of agents and at branches within a very few weeks. Twenty h. p. motor, new body design, etc., etc.

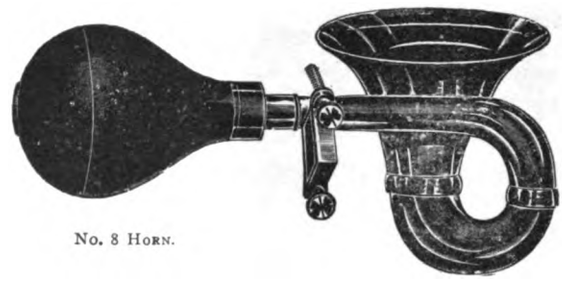
Write us and we will gladly tell you more about it.

THE WINTON MOTOR CARRIAGE CO.,

FACTORY AND GENERAL OFFICES:

CLEVELAND, U. S. A.

THE FRENCH HORNS ARE THE FINEST IN THE WORLD.



No. 8 Horn.

We are importing the largest assortment and most complete line of **FRENCH HORNS** coming to this country. **No. 8** is the most popular style, with opening pointing at right angle from the bulb.

We have in stock the following sizes, in addition to list given in our Catalog.

LIST PRICES.

Number.	Total Length.	Diam. of Bell.	Metal.	Price.
8	8½	3¼	Nickel	$4.00
9	10	3½	"	4.80
10	11	4	"	5.20
11	12	5	"	6.50
13	12	5½	"	7 50

The following are straight style, the opening pointing forward from bulb.

Number.	Total Length.	Diam of Bell	Metal.	Price.
12	13	5	Brass	$6.40
14	14	5½	"	7.60
1	8	2¾	Nickel	2.75
1½	9	3⅛	"	3 00
2	10	3½	"	3 40
2½	10½	3⅞	"	3 75
3	11½	4½	"	4.40
4	12¼	5⅛	"	5.60
5	13½	5¾	"	7 00

Any of the above Horns, fitted with 4 feet Flexible Metallic Tubing, $4.00 extra. No. 4, 12¼ total length, 5⅛ diameter of bell, with 3¼ feet Flexible Metallic Tubing and Screen attached, $12.50. Brass or Nickel.

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AGAIN THE FOSTER AUTOMOBILE PROVES ITS SUPERIORITY.

Their wagon known as "B-70," won a Blue Ribbon in the New York-Buffalo Endurance Race, 1901.

This same wagon had continuous, hard usage from September, 1901, to October, 1902, and then was entered as

"B-70" in the New York-Boston Reliability Contest, and with the original boiler, engine and all vital parts, finished with 100% Reliability credit.

No other make of machine made a better record.

The Foster is a steam vehicle.

Of the automobiles that started in the big run, fifty-five were gasolene and nineteen steam. Of those that finished with clean scores, ten were steam and ten were gasolene, conclusively proving the superiority of steam as a motive power, for touring purposes.

Catalogue of Foster Automobiles sent on request.

FOSTER AUTOMOBILE MFG. COMPANY, Rochester, N. Y.

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BUFFALO'S SPEED LAW

New Ordinance Strongly Supported, but is Referred to Committee—Its Provisions.

After hanging fire for a number of weeks the automobile speed ordinance now pending in the Buffalo, N. Y., councils, and indorsed gy the Buffalo Automobile Club and automobilists generally, has been again postponed. A committee of three has been appointed to look into the matter and give the subject further consideration.

The action referred to was taken last week. The proposition is to amend the city ordinances so as to permit a speed of 15 miles an hour throughout that part of the municipality beyond the business zone bounded by North and Best streets, Fillmore avenue and Buffalo River, leaving a rate of eight miles an hour inside of those boundaries. A number of the prominent citizens and business men, automobile owners and members of the Buffalo Automobile Club, attended the hearing and presented reasons why the Councilmen should not place a taboo upon the automobile, the vehicle, of the future for business and plasure, by voting down the measure which the Aldermen have already approved.

Dr. Lee H. Smith presented the appeal in behalf of the Automobile Club, in five points, as follows:

Point 1—The Common Council is authorized by the charter of the City of Buffalo to regulate the use of its streets and to declare in what manner and for what purposes they shall not be used.

Point 2—In regulating the speed of automobiles the city cannot limit the speed thereof in the built-up portions of the city to a lower rate than eight miles an hour, and in the unbuilt-up portions thereof to a lower rate of speed than 15 miles per hour.

Point 3—It is, therefore, the duty of the Common Council to define the boundaries of the built-up portion of the city, and limit the speed of automobiles therein to a rate of not less than eight miles per hour, and also limit the speed in the portion outside such built-up portion to a speed not less than 15 miles per hour.

When the change in th ordinance was suggested to the Committee on Ordinances of the Board of Aldermen a proposed ordinance was submitted to them in which the territory limiting the speed to eight miles an hour was given. After consideration the Committee on Ordinances determined that the restricted territory was not sufficiently large, and modified the territory proposed as follows:

On the north by the northerly line of Porter avenue and the northerly line of North street to the easterly line of Main street; running thence, northerly to the northerly line of Best street thence, easterly along the northerly line of Best to the easterly line of Fillmore avenue; thence, southerly alonk the easterly line of Fillmore avenue and the easterly line of Smith street to the northerly line of Buffalo River runing thence, westerly along the northerly line of Buffalo River, to the easterly line of Buffalo Harbor; running thence, northerly along the easterly line of Buffalo Harbor to its junction with Porter avenue, the place of beginning.

It will, therefore, be seen that the teeritory where the speed is limited to eight miles an hour, takes in all of the busiest sections of the city.

In view of this fact it should not be deemed necesary to make any further limitation of the territory in which these vehicles are limited to a speed of eight miles per hour.

Poine 4—No discrimination is sought by the automobilist in asking the enactment of this ordinance; all vehicles are treated alike.

Point 5—Under the circumstances it would seem that the request of the Buffalo Automobile Club is reasonable, and that the Board of Councilmen should approve the action of the Board of Aldermen in adopting this ordinance.

Dr. Smith supported these points with a statement in which he promised the Councilmen, on the faith of the club, not only would the members of the Automobile Club observe the regulations is so adopted, but would individually and collectively prosecute those who violated the audience. Members of the club, he said, were obliged to sign an agreement, before they were admitted, to obesrve the speed regulations and not to race upon the city streets; and two members had been expelled for violating this. The district where the speed was limited to eight miles and hour had the approbation of the Superintendent of oPlice and Corporation Counsel. He pointed out that there was only one objector at the first hearing and none on this occasion. All the automobilists desired, he said, was generous treatment, such as had been received from the aldermen.

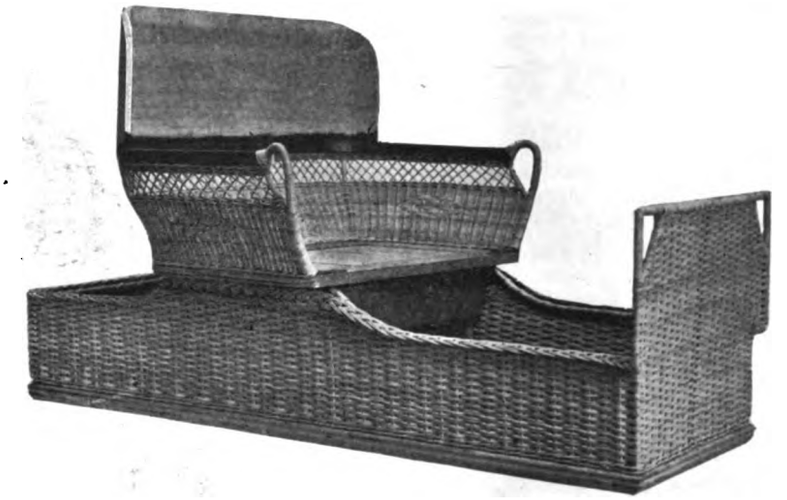
Councilman Smith suggested that action on the proposed ordinance be postponed a week to give a committee af three an opportunity to look into the matter further.

Councilman Stoddart stated that while he was away last summer he looked into automobile regulations and found a speed limit of eight miles in Boston and 15 miles beyond the suburbs. In Philadelphia it was seven miles an hour. His investigation had not extend dto Pompeii, Herculaneum, Ninevah, Tyre and other dead cities. He said he believed the members of the Automobile Club could be trusted with an increased rate of speed, but others had to be looked after.

Councilman Fleischmann spoke in favor of increasing the rate as proposed. hTe motion to appoint a committee prevaild, howevr.

Body Made of Rattan.

The Rattan Novelty Co., of Indianapolis, Ind., manufacture many novelties in rattan for motor vehicle use, such as hampers, seats, umbrella holders, etc., in addition to the neat runabout body shown herewith.



The makers use rattan and not willow, and claim for this body that it is stronger than wood.

Soon Pay for Themselves.

Reference has been made in these columns to the extensive use made of motor vehicles by the Hartford (Conn.) Electric Light Co., and that use has demonstrated most conclusively their value.

Two years ago the rapidly increasing business of the company was drawing so heavily upon the energies of the executive department that the appointment of an assistant to the general manager was thought necessary. While looking about for the right man President Dunham conceived the idea that use of an automobile might help matters, and, as an experiment, he purchased one of the Electric Vehicle Co.'s runabouts. It was found that the machine greatly increased the scope of personal inspection of the company's work going on in different parts of the city, and the appointment of the assistant was indefinitely postponed. President Dunham says that the vehicle, which is still in commission, paid for itself in eight months.

More recently the company has purchased an additional runabout for the foreman of line construction, an electric delivery wagon and a large electric emergency wagon for general utility and "trouble business."

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Attacks Constitutionality.

The conviction and fining of Harry S. Woodworth by Peace Justice C. P. Downs of Brighton, N. Y., on May 16, to the amount of $50, for alleged violation of the so-called Automobile Law, regulating the speed of horseless vehicles on the highways, which was affirmed by County Judge Sutherland at Rochester, N. Y., has started an attack upon the constitutionality of the legislation by Mr. Woodworth's counsel, Horace McGuire, who has appealed the case to the Appellate Division.

Mr. McGuire contends that Section 666 of the Penal Code discriminates unfairly and is unreasonable because it makes the incorporation of a village the test of criminal liability instead of the built-up condition of the locality. Mr. McGuire interprets the penal legislation as practically guaranteeing a person the common law right to operate an automobile at a reasonable and proper rate of speed, having regard for the traffic and use of the highway. Interference of the Penal Code with a common law right is unconstitutional.

The principal argument, though, is the discrimination of the law, making the rate of speed for automobiles eight miles an hour in incorporated villages and allowing twelve in unincirporated, although it is well known that many of the latter class are larger and more thickly settled than many incorporated villages.

Observer "Rendered Assistance."

When a man becomes "rattled" he is almost helpless. The driver of a car in the A. C. A. endurance run, was a case in point. He had everything ready for a start apparently, and went to start his engine. He could not get a spark, however. A dynamo supplies the spark, and several turns of the flywheel are necessary before the engine will start. Try as he might the operator—a little chocky built fellow—could not get it to going. He turned the handle with all his might, got red in the face and out of breath.

His observer watched him for a while in silence. Then he said: "Let me try that." He turned the crank and found that it was difficult to force around. "I believe it is because the lubricant is cold," he said. "Get a torch or something that we can warm it with."

The operator was incredulous, but finally went in search of the article wanted. It was lighted, applied to the shaft once or twice and the liquid oil began to drop out of the case.

"Now try it," remarked the observer. The operator did, and the crank went round freely and easily, the needed spark came and the engine started up with right good will. The two men jumped into the car, dashed to the starting point, and were just in time to escape being late.

At the noon control the operator bought a torch and carried it along with him. Several other operators reported that they had trouble in starting, and there is little doubt that the low temperature at New Haven on Thursday night was accountable for it.

How Made and Used.

The illustrations herewith show the make-up of the wood wheels marketed by the Neustadt-Perry Co., of St. Louis Mo.

The hub has bands pressed on by hydraulic pressure, making them solid and

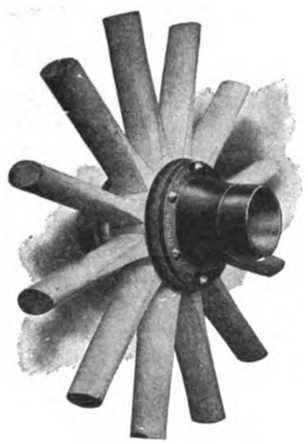


compact. After this operation the sleeve, or box, is inserted. The outside cap is next telescoped over this sleeve, coming out at the opposite side of hub, having bolts pass through which lock the sleeve and flange to-





gether. It is claimed that there is no possible chance for this wheel to revolve around the box, as the bolts hold the box and flange together, as they pass between every other spoke.



This wheel can be readily keyed to any axle, or adapted to revolve on the axle if the sprocket is fastened on the wheel.

Most Wonderful Claims.

Patents have been taken out in England on a motor for which extraordinary claims are made. The motor is a double acting one, and will work either as a steam or internal combustion engine. Its size and power, according to reports, are practically unlimited, as are the purposes to which it may be applied. Should this wonderful motor fulfil half the claims made for it a revolution in mechanical propulsion may be expected.

Automobile Road in Africa.

"Darkest Africa" is already being traversed in many directions by the automobile. This is shown by the fact that the Belgian colony is constructing a regular automobile road between Nsongolo and the River Kwango. The work is being done under the direction of Captain Carton.

The progressiveness of the Belgians in this respect has excited the envy of the British, and an agitation is going on among the English colonists to have similar roads constructed in the districts controlled by them. It is pointed out that roads capable of accommodating such automobile traffic as would serve to open up interiors and facilitate trade in a wonderful way could be easily and cheaply formed from local material, and, not being subject to the wear of hauling cattle and horses, which is responsible for 90 per cent of the damage done to road surfaces by traffic, would last infinitely longer than ordinary roads. In fact, for the most part, the automobile traffic would improve rather than deteriorate the road surface.

It is also suggested that a good way to secure immigration in Africa would be to have no speed limit on the roads leading to somewhere in the interior, providing, of course, automobilists are regarded as a good class of immigrants.

Globe Girdlers Reach St. Petersburg.

After suffering an eclipse of many weeks, having been last lost sight of at Berlin, the globe girdling automobilists, Dr. Lehwess and his companions have been heard from at St. Petersburg.

From Russia the party will go by way of ous run, having taken a wrong turning and spent two days toiling over ploughed fields. The car had often to be pulled out of the mud by villagers with teams of horses.

From Russia Lehwess will go by way of Siberia and Japan to the United States. Since leaving London they have travelled 2,715 miles.

The adventurers left London last February in a specially built Panhard car. The latter has sleeping quarters and provision for carrying a large quantity of food and fuel. Many troubles were encountered before the journey was well begun, and it has for a long time thought it had been abandoned.

When to Take Care.

If a leak in the gasoline tank or connection is discovered at night the lamps should be put out at once, and care taken that no light is brought near the car. If it is impossible to rectify the leak without a light, and no electric lamp or torch is available, the acetylene lamp may be lighted and placed at least four yards from the car. When the leak is stopped the escaped gasoline should be wiped away, and a few minutes should be spent in waiting for what is left to evaporate before attempting to light the lamps.

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The Week's Patents.

710,938. Voltmeter Scale. Walter C. Baker, Cleveland, Ohio. Filed Feb. 15, 1902. Serial No. 94,151. (No model.)

Claim.—A voltmeter scale adapted for cooperation with the movable pointer of a voltmeter, and having thereon graduation marks, and, associated with said marks, one set of figures indicating the total voltage of the battery, and a second set of figures which indicate the voltage per cell and are respectively the figures obtained by dividing the associated figures in the first series by the number of cells in the battery.

710,953. Electric Battery. Albert J. Cook, Jersey City, N. J., assignor to the Federal Development Company, Charlestown, W. Va., a Corporation of West Virginia. Filed July 20, 1901. Serial No. 69,026. (No model.)

Claim.—1. A battery comprising an outer cell provided on its bottom with a plurality of spaced apart sets of ribs, the outer ribs of each set being spaced from the wall of said cell and combining therewith to produce an intermediate channel, an outer electrode located in said channel and partitioned into compartments agreeing in number and shape with said sets of ribs, said partitions being seated between the sets of ribs, and electrode containing caps fitting and conforming to said compartments and sets of ribs.

710,962. Pneumatic Tire. Rudolph Fleischer and Matthias Reithmair, Minden, Germany. Filed Dec. 21, 1901. Serial No. 86,798. (No model.)

Claim.—A pneumatic tire consisting of separate air tubes and distinguished from all other pneumatic tires by having a case in which flaps are cut at distances corresponding to the number of tubes, through the flap openings air tubes can be introduced by means of laces into the space within the case, which is closed by a piece of material which is laid over the flap and the thick edges of which are grasped by the rims of the felly.

710,971. Rubber Tire. Charles W. Harris, Akron, Ohio. Filed April 11, 1902. Serial No. 102,412. (No model.)

Claim.—1. In a rubber tire for vehicle wheels, the combination with the channel, the tire and independent retaining wires, of frictional fabric strips extending transversely at intervals through said tire to form rests for said retaining wires, substantially as specified.

711,005. Carbureter. George M. Schebler, Indianapolis, Ind. Filed April 21, 1902. Serial No. 103,875. (No model.)

Claim.—1. In a carbureter, the combination, with a reservoir whose shape is such that a uniform volume of liquid contained in its bottom may be defined by any one of a plurality of surface planes having substantially the same point of intersection, of a discharge nozzle communicating with the reservoir and the discharge outlet of which lies substantially at the point of intersection aforesaid, an air pipe into which the said discharge outlet of the nozzle leads, means for controlling the flow of liquid through the nozzle, and means for maintaining a substantially constant volume of liquid in the reservoir.

711,081. Vehicle Wheel Tire and Fastening. Arthur L. Stevens, New York, N. Y. Filed Jan. 9, 1902. Serial No. 88,965. (No model.)

Claim.—1. A vehicle wheel tire comprising a substantially solid elastic body and tread having inserted in its base which lies within the wheel rim channel a series of strips or layers of reinforcing fabric which are disposed certically edgewise in the general plane of the tire or wheel and are separated by inwardly extending adhering layers or strata of the body and tread of the tire and are adapted for passage through them of transvers pin or bolt fastenings applied at the base of the tire.

711,112. Steam Truck. Walter H. Knight, New York, N. Y.(assignor to Pneumatic Carriage Co., New York, N. Y., a Corporation of West Virginia. Filed Feb. 25, 1901. Serial No. 48,744. (No model.)

Claim.—1. In a motor vehicle, the combination with the truck frame and the steering wheels mounted on independent axles, pivoted to said truck frame, of two independent engines spring supported on said truck frame and having their shafts respectively in line with the pivots of said independent axles, and independentiy connected to said steering wheels through extensible connections, each consisting of sliding coupling members one of which is carried by the engine shaft and the other is mounted on the pivot of the independent axle, such driving connections comprising a power transmitting gear concentric with the pivots of the steering axles.

711,114. Machine Engine Oiler. George J. Kraushaar, Cleveland, Ohio. Filed Feb. 14, 1902. Serial No. 94,043. (No model.)

Claim.—1. As a new article of manufacture, an oiling can having an opening in its top and a slot at its side entering said opening and having a depressed seat about said slot and opening constructed to receive a cover, and a projection on its outer and lower portion in line with said slot constructed to be engaged by a handle, substantially as described.

711,118. Motor Vehicle. William Norris, Preston, England, assignor to T. Coulthard & Company, Limited, Preston, England. Filed Nov. 5, 1901. Serial No. 81,278. (No model.)

Claim.—1. In a compound engine, in combination, a high and a low pressure cylinder with corresponding valve chests, a cylindrical valve casing in each chest, steam ports between the casings and both ends of their respective cylinders, a hollow piston valve open at both ends within each casing, an annular space between each valve and each casing, passages in the casings forming communication between the chests and annular spaces, a hollow cover closing the back end of both cylinders, a partition dividing the hollow space of the cover into two portions one of which communicates with the interior of the high pressure valve and the other communicates with the interior of the high pressure valve, an intercepting valve chest fixed to the hollow cover, a steam passage on each side of the partition communicating with the intedcepting valve chest, an exhaust steam outlet in the low pressure valve casing in direct communication with the annular space, and means for operating the valves, substantially as described.

711,295. Lubricator. Joseph H. Deare and John M. Leckner, Detroit, Mich., assignors to American Lubricator Company, Detroit, Mich. Filed Feb. 14, 1902. Serial No. 93,994. (No model.)

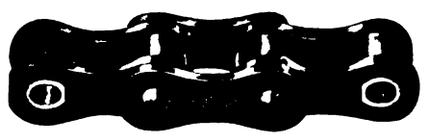
Claim.—1. In a gravity feed lubricator, the combination with a reservoir, a feed tube and an adjustable plug in the upper end of said feed tube; of a valve stem within said feed tube consisting of two parts, one part being connected to the other and having a limited longitudinal movement independent thereof, independently operating springs, one to actuate each part of the valve stem, a

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valve on one end of said valve stem, and a hand lever pivoted to the opposite end of the valve stem.

711,122. Accumulator. Jean B. Relin, Levallois-Perret, France. Filed Dec. 4, 1901. Serial No. 84,625. (No model.)

Claim.—1. A frame adapted to form the supporting portion of an accumulator element or plate having the side and bottom walls of triangular form in cross section and the upper portion provided with a series of steps adapted to receive the ends of downwardly depending strips, substantially as shown and described.

711,235. Gas Engine. Edward G. Shortt, Carthage, N. Y. Filed Oct. 5, 1901. Serial No. 77,706. (No model.)

Claim.—1. A gas engine having a combustion chamber having a primary exhaust to the atmosphere, a vacuum space with secondary exhaust thereto from the combination chamber, an intercepting valve controlling the primary exhaust passageway, and variable pneumatic means for seating said valve during a secondary exhaust, as set forth.

711,311. Steam Boiler. Henry K. Hess, Philadelphia, Pa. Filed June 14, 1902. Serial No. 111,756. (No model.)

Claim.—1. A steam boiler comprising a shell having lower and uppepr heads, each provided with a series of flue openings, upright hollow projections rising from the upper faces of the upper and lower heads and alined with their respective openings, flues telescoping with the projections, and a bonding metal at the junction of the flues and projections with the heads for the purpose described.

711,823. Motor for Toy Vehicles. Harry T. Kingsbury, Keene, N. H. Filed April 23, 1902. Serial No. 104,326. (No model.)

Claim.—1. A motor for toys, comprising an open bottom casing adapted to be secured to a body, a separate bottom plate for the casing, means for securing the bottom plate in position, a vertical winding shaft mounted centrally in said bottom plate, a convolute spring above said gear, secured thereto at its outer end and at its inner end connected to the winding shaft, and a wheeled axle mounted in bearings at the upper side of the bottom plate, and having a pinion in gear with said horizontal gear, the spring motor and driven parts all being removable with said bottom plate; substantially as described.

711,441. Motor Vehicle Frame. Andrew L. Riker, Shorthills, N. J., assigner to the "Locomobile" Company of America, New York, N. Y., a Corporation of West Virginia. Filed July 19, 1902. Serial No. 116,214. (No model.)

Claim.—1. A frame for motor vehicles, including angle iron side members tapering in depth or height from at or near the middle thereof toward the ends.

Evils of Premature Ignition.

In these days, when almost every gasolene car has electric ignition, there is an ever present danger from too early firing which was impossible in the old days of incandescent platinum tubes. The firing point then practically remained constant, except that a very hot lamp fired the explosion a trifle sooner than a moderately hot one. Firing before the charge had reached its maximum of compression was at any rate practically impossible. Now, to fire a charge too early in a cylinder of a diameter of 4 inches to 5 inches means a gigantic strain upon the connecting rod and the shafting.

Freddie and the Automobile.

A youth gifted with wonderful imaginative powers is Freddie Hartman, aged ten, who returned to his home in this city last week after an absence of two days, during which he underwent many exciting experiences.

"When I left home I went over to Seventh avenue," he said. "A big automobile stopped right in front of me. There was three big men inside. One of them got down and he says to me, 'Say, young man, don't you want a ride?' I told him I was going to school, and then he says, 'We'll get you to school quick,' and he grabbed me by the arm, and before I knew what he was doing he threw me right up into the seat.

"They started the machine going and kept it up all day. I bet we went through every street in New York and all the parks. One of the men had grub in a bag. It tasted good, but I wanted to go home and they wouldn't let me. When it was getting dark we went across the Brooklyn Bridge. When we came back the automobile went on a big steamboat. The men told me if I didn't keep quiet I'd get thrown overboard. They made me sleep down in a big black place, where it was all barrels and boxes, and there was a lot of 'guineas' sleeping there, too.

"There was great big bugs crawling around, and I nearly got scared to death. I went to sleep, and when I woke up we were at a big city. The three men put me in the automobile and we rode off the boat. They told me the place was Hartford."

"Did the men tell you what they were taking you away from home for, darling?" asked his mother.

"No; they hardly ever spoke to me. We rode out into the country. After going an awful long time the auto stopped and one of the men got out and opened a gate in a fence, and you wouldn't think there was any gate there at all. Then they turned the auto through the gate and we were in a wood. By and by they yelled out, 'Here we are. Don't speak above a whisper.' There was a big log cabin.

"I don't remember much what happened there, except I got little to eat and I had to sleep on logs. Yesterday afternoon the men took me in the machine again and we went into the town. They went into a drug store and told me to wait outside. I saw a 'cop' and I told him about it. He waited till they came out, and then he arrested every one but me. He took them to jail, too.

"I told the policeman I wanted to go home, so he put me on the boat. He told me he'd write and tell me what they did with the men."

Against Going too Slowly.

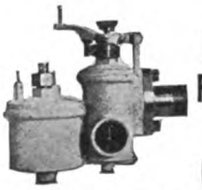
Original, and supported by pointed arguments, is the theory of Dr. Lee H. Smith, the retiring president of the Buffalo Automobile Club, to wit, that it is the slow speed at which teams, etc., are permitted to go that makes the streets of a city dangerous.

Dr. Smith's argument is that a carriage, for instance, not allowed to stand but compelled to move at a pace not faster than a walk, is within the law, but nevertheless a menace to public safety, because everything else on the street movs so much faster.

He believes that the law and the coachman should, in a way, be whipped up. A bicycle or an automobile that has to tarry because of an obstructing cab or brougham becomes a danger not because the bicycle and the autos go fast, but because the other vehicles move so slowly that there is congestion of traffic when the faster ones catch up. Dr. Smith's theory is that the ordinance, barring necessary street crossing regulations, should make a speed that is compulsory not only with regard to limit, but also to maintenance.

In other words, Dr. Smith thinks there is a good deal of "loafing" on the streets as well as on the sidewalks, and wants all vehicles as well as all persons to "move on." He believes that the way to make a get-up-and-get town is to get up and get and get quickly, whether a-foot, a-wheel, a-horse or a-mobile.

The idea of making people and things keep up to the time instead of behind may not be such a bad scheme after all.



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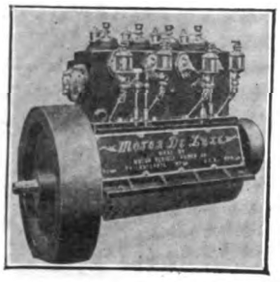
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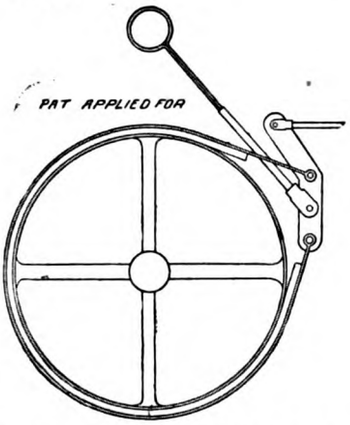
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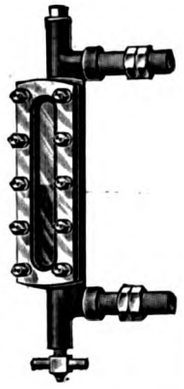
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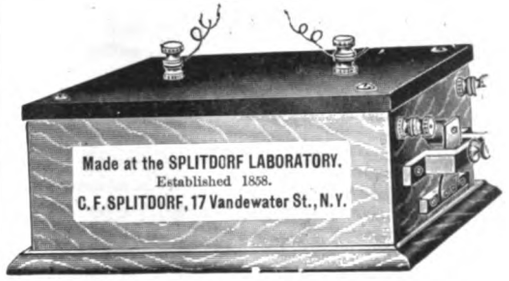
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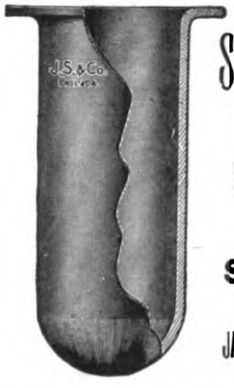
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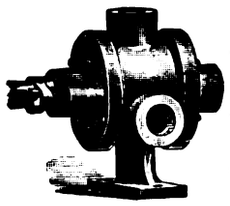


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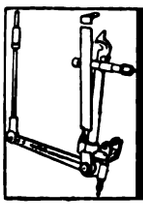
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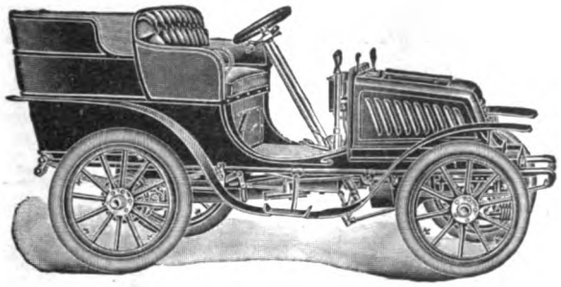
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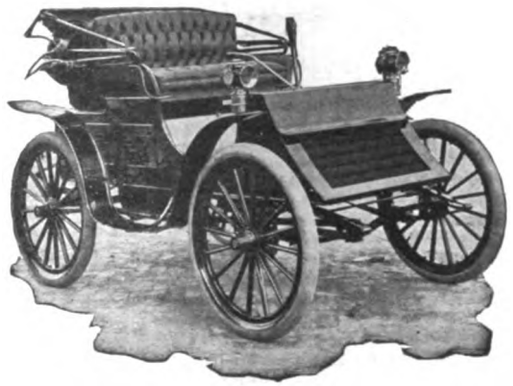
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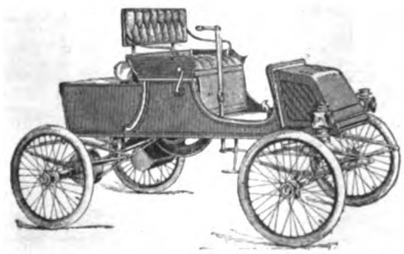
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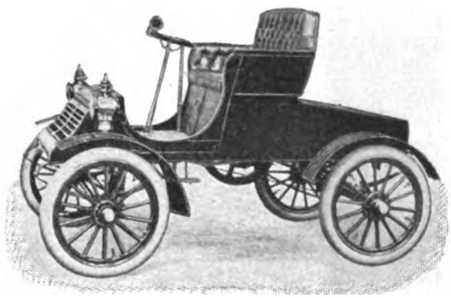
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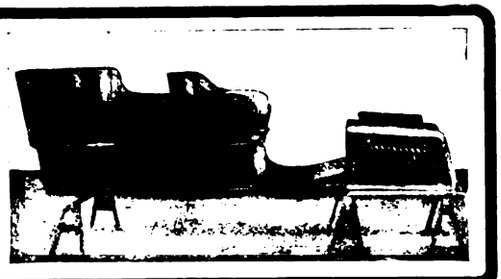
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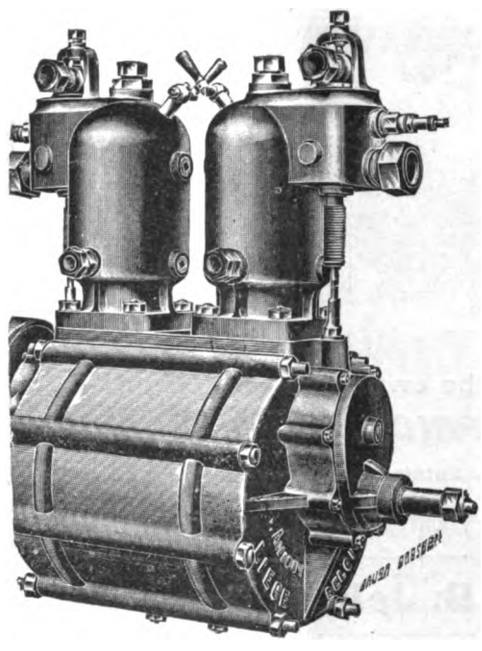


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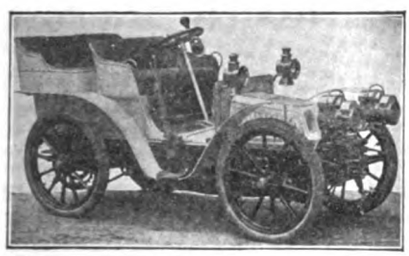
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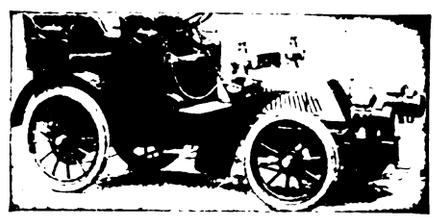
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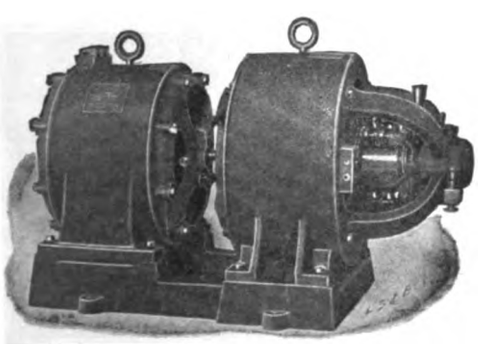
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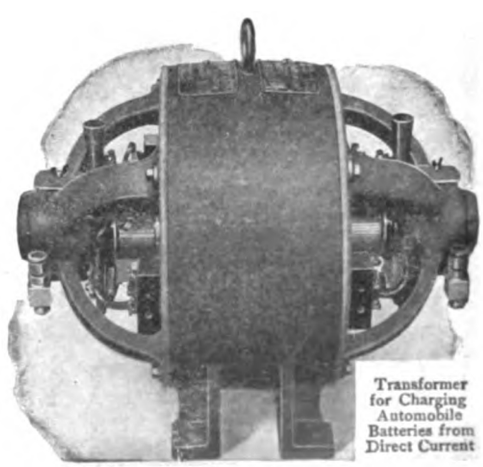
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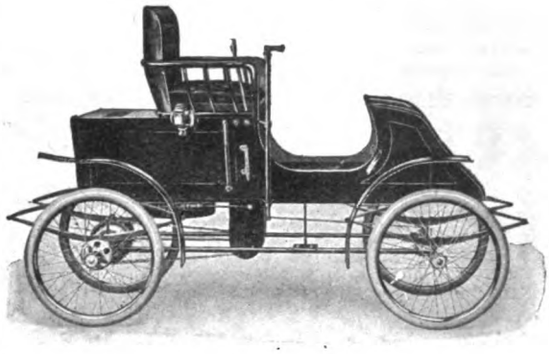
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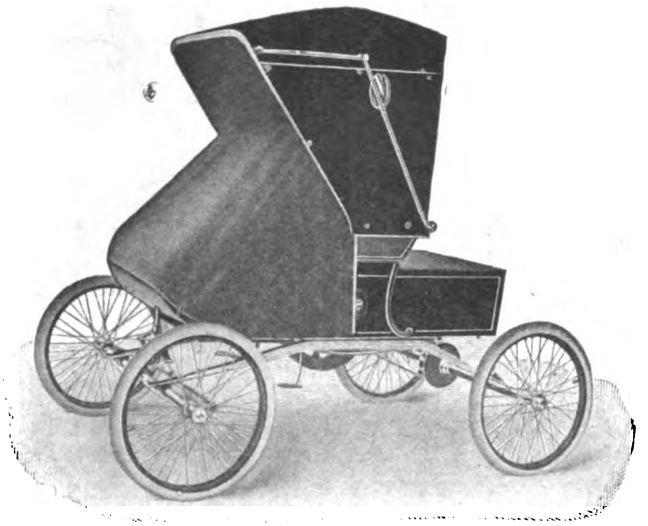
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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, October 30, 1902 No. 5

TIRE SUIT SETTLED

G & J and Diamond Reach an Amicable Agreement—Diamond Obtains a License.

What gave promise of proving a celebrated case was last week taken out of the hands of the lawyers and settled amicably, i. e., the suit of the G & J Tire Co., Indianapolis, vs. The Diamond Rubber Co., Akron, for alleged infringements on the patents covering the well-known G & J detachable tire. The proceedings were filed in the United States Circuit Court in this city on August 28th last, and as considerable feeling had been exhibited by both sides it was expected that a long and bitter fight would ensue.

The peaceful settlement will, therefore, prove in the nature of a surprise. According to the terms of the agreement the litigation is discontinued, The Diamond Rubber Co. acknowledging the validity of the G & J patents and in return receiving a license to manufacture detachable double tube tires on the basis of a favorable royalty. The agreement was signed by Lewis D. Parker, as president of the G & J Tire Co., and W. B. Miller, as secretary of The Diamond Rubber Co.

All parties to the affair are well pleased with the outcome. The deliberateness of the Diamond people in marketing, in the face of formal warning, what they frankly admitted was an infringement of the G & J tire was an audacious move that gave evidence of their aggressiveness and the recognition of the patents by such a big, bold and financially strong company brings to the G & J standard an ally that is not to be despised. The position obtained by the Diamond detachable tire in a short three months is additional evidence of the capacity and activity of the men who make it.

The settlement out of court was not effected without strenuous opposition. It is understood that certain rivals of the Diamond Company blocked the way at every turn and endeavored by every means possible to prevent the issuance of a license, but unavailingly as results prove.

More Space for Garden Show.

In spite of the additions to the space available for exhibition purposes at Madison Square Garden, the cry is still for more room. Rising to the occasion, the Garden management is putting another plan into operation. To the main floor and galleries, the restaurant and the basement, is now to be added the tunnel in the latter.

"Just ten minutes ago the architect was here and I instructed him to mark the tunnel out in spaces, and they will be offered for sale almost immediately," said Assistant Secretary Young on Wednesday, in reply to the Motor World man's inquiry. "The tunnel measure 128 x 12 feet, and we will dispose of it in lots to suit.

"There are but two spaces in the basement left. To-day we had an application, and on looking the ground over the applicant said that he would rather have space in the tunnel than either of the two basement stands."

Twenty-one new exhibitors have secured space, among them being several prominent concerns. They are as follows:

Willis Park Row Bicycle Co., New York City; National Vehicle Co., Indianapolis, Ind.; S. B. Bowman Automobile Co., New York City; Goodyear Tire & Rubber Co., Akron, O.; Gleason-Peters Air Pump Co., New York City; H. B. Brazier, Philadelphia, Pa.; Brennan Motor Co., Syracuse, N. Y.; Century Motor Vehicle Co., Syracuse, N. Y.; Beardsley & Hubbs Mfg. Co., Shelby, O.; Improvements Mfg. Co., Boston, Mass.; Cadillac Automobile Co., Detroit, Mich.; Central Automobile Co., New York City; Kenneth A. Skinner, Boston, Mass.; Conger Mfg. Co., Groton, N. Y.; F. B. Stearns Co., Cleveland, O.; Apperson Bros., Kokomo, Ind.; Sintz Motor Car Co., Grand Rapids, Mich.; Grant Ferris Co., Troy, N. Y.; Warwick Cycle & Automobile Co., Springfield, Mass.; Motor Cycle Mfg. Co., Brockton, Mass., and Lindsay Automobile & Parts Co., Indianapolis, Ind.

To Sell International Product.

An arrangement has just been made whereby the Banker Bros. Company become the exclusive agents for the product of the International Motor Car Company for the cities of New York, Philadelphia and Pittsburg.

SEVENTEEN SUCCESSFUL

Reliability Record Better Than Supposed—Butler's Queer Actions—"The Immortals."

Seventeen instead of thirteen cars, as first appeared probable, have qualified for the chief prize in the reliability run of the Automobile Club of America, the president's cup. All, of course, had perfect scores, 2,092 points.

The successful seventeen, seven of which were steamers, are as follows:

No.	Name.	Operator.	Power.
1.	Packard	H. W. Whipple	Gasolene.
3.	Packard	G. L. Weiss	Gasolene.
5.	Prescott	H. M. Wells	Steam.
7.	Lane	J. Harrison	Steam.
11.	Haynes-Apperson	F. Mutt	Gasolene.
24.	White	P. H. Deming	Steam.
25.	White	W. T. White	Steam.
26.	White	G. S. Waite	Steam.
*27.	White	A. J. Scaife	Steam.
33.	Grout	C. B. Grout	Steam.
42.	Fournier-Searchmont	L. J. Sackett	Gasolene.
47.	Knox	H. A. Knox	Gasolene.
63.	Oldsmobile	R. M. Owen	Gasolene.
67.	Fournier-Searchmont	J. S. Bunting	Gasolene.
68.	Fredonia	C. P. Gaither	Gasoline
70.	Foster	F. J. Holley	Steam.
76.	Fournier-Searchmont	R. A. Greene	Gasolene.

*Delivery wagon.

As was stated last week, the impossibility of presenting one trophy to seventeen separate eligibles induced the club to suggest to them that each be content with a gold medal and the honor of having his name inscribed on the cup, which would remain in the possession of the club itself. The suggestion met with ready acceptance, and that procedure will be followed.

The other cups were awarded as follows:

No.	Name.	Operator.	Power.
30.	Stevens-Duryea	J. F. Duryea	Gasolene.
48.	Knox	C. S. Mason	Gasolene.
21.	Darracq	H. H. Brown	Gasolene.

These three cars made stops of 30, 20 and 30 seconds respectively. That of the Stevens-Duryea car was caused by the failure of the operator to open the stop cock between the gasolene tank and the carburettor. The Knox car lost 20 seconds by the motor being stalled, and H. H. Brown's Darracq lost 30 seconds by coming to a stop while putting on the brake.

The club's letter conveying the suggestion to the seventeen "immortals" follows:

"Dear Sir—The president of the club presented a cup to the club to be awarded to

(Continued on page 130.)

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RECEIVER FOR MUNGER

Tire Company Stockholders Make the Application—Reorganization Said to be Planned.

Application has been made for the appointment of a receiver for the Munger Automobile Tire Co., Trenton, N. J., and there is little doubt that it will be granted. On Saturday last J. T. Van Cleef, representing a number of the concern's stockholders, secured from Vice-Chancellor Reed an order commanding the officers of the company to show cause on Wednesday, November 5, why a receiver should not be named, and also restraining the company from paying out any funds or carrying on its business in the meanwhile.

John L. Kuser, according to the bill of complaint, advanced the company upward of $1,400 for its payroll, and the Messrs. Stokes and the Trenton Rubber Co. have a claim of about $1,200 for material furnished. The assets are placed at $5,000 and the liabilities at $7,000.

The news will excite very little surprise, as it has been known for some weeks that trouble in the company's affairs was impending. It was formed some months ago to manufacture the Munger non-puncturable tire.

Despite statements to the contrary, L. deF. Munger says that the company will be reorganized and placed on a sound financial basis. It is the intention of the present stockholders, he adds, to materially increase their investments, and the process of reorganization is well under way.

Only Two A. C. A. Officers Renominated.

After several weeks of labor the nominating committee of the Automobile Club of America has completed a ticket to be voted for at the annual meeting of the club. With two exceptions, the nominations for the presidency and the treasurership, respectively, the old officers and directors are replaced by new ones. Rotation in office, which has been so much talked of in the club, is thus given almost full swing.

The renominations of President A. R. Shattuck and Treasurer Jefferson Seligman were anticipated.

Winthrop E. Scarritt was nominated to succeed General George Moore Smith as first vice-president, James Stillman was named in place of Edwin Gould as second vice-president, and William K. Vanderbilt, jr., in place of Harry Payne Whitney as third vice-president.

The terms of W. E. Buzby, William Henry Hall and V. Everit Macy will expire as governors. Colonel John Jacob Astor, George F. Chamberlin and Peter Cooper Hewitt have been nominated to succeed them for a three year term. Harlan W. Whipple has been named to fill the place of Juan M. Ceballos, who had still a year to serve as governor and resigned.

SEVENTEEN SUCCESSFUL.

(Continued from page 129.)

the vehicle showing the largest number of reliability marks at the end of the contest. Your automobile, together with 16 others (all of them having made a perfect score) is entitled to this cup. The committee is exceedingly gratified that so many cars have qualified for the cup, and you will, we are sure, appreciate the difficulty of awarding it under these circumstances. It is plain that the cup belongs to 17 of the contestants 'in solido.' It would hardly be a solution of this difficulty to award the cup to these 17 contestants and leave it to them to settle to whom it should belong. The committee suggests that the cup be presented 'in solido' to these 17 contestants, that their names and the names of their automobiles be put upon it and that they present this cup to the club as a memorial of this most remarkable record, and that the club, in recognition of this gift, and of the perfect score, present to each contestant a gold medal bearing the name of the contestant and his car with a statement that his automobile qualified for the president's cup in this memorable event.

"If you approve of this plan please so advise the committee. If you do not approve please make any suggestions you can as to a better method of settlement of this matter."

The announcement of awards was not without incident and created such a storm about the person of S. M. Butler, secretary of the Automobile Club, as to leave him in no enviable position. During Monday, Tuesday and Wednesday of last week Butler was an object of solicitude on the part of reporters. They had been led to believe that the announcements were due to be made public daily, and, eager for news, they fairly camped on his trail. He was polite, but unprolific of information; but as he was supposed to be dealing fairly with all, no complaint was made until Wednesday afternoon, when a rather obscure evening paper appeared with authentic news. The storm broke immediately, and under pressure Butler confessed that he had "played favorites," and, under pledge of secrecy, had given the information to an automobile publication that required it in order not to be "beaten" by a full week; the publication, strangely enough, being one that only recently had attacked President Shattuck. Instead of respecting his pledge this reporter promptly sold the news to the evening paper in question, and his employer as promptly wired it to the various contestants concerned. Just why Butler went out of his way to favor one paper at the expense of all the others has not, however, been explained.

It was thought that the report of the Contest Committee on the certificate awards would be given out early his week. The illness of Chairman Scarrit prevented a meeting on Tuesday. On Wednesday Mr. Scarritt said, in reply to the Motor World man's inquiry:

"We are trying to hold a meeting to-day, but it is doubtful whether we shall succeed. We have much work to do, however, and it is not at all certain that we can finish it at one session."

GALLAHER JOINS MOBILE

Leaves Searchmont to go to Tarrytown—Changed Policy Outlined.

Quite the most unexpected trade change that has occurred in some time came to pass this week when E. B. Gallaher, vice-president and general manager of Fournier-Searchmont Automobile Company, Philadelphia, resigned those offices to become general manager of the Mobile Company of America, Tarrytown, N. Y. The occurrence will carry with it an almost radical change in the policy of the latter concern.

It is no secret that it has lost a large sum of money, but Mr. Gallaher states that all debts have been liquidated and that he assumes charge with the company on an absolutely clear and sound basis, that being one of the conditions of his acceptance of the managerial reins. In his new position it is his purpose to pursue the same aggressive policy that marked his conduct of the Fournier-Searchmont institution and to bring the Mobile Company into the forefront.

When asked if the change from steam to gasolene would not cause him some perplexity, Mr. Gallaher smiled.

"Oh, I'll be a steam man, but with strong gasolene tendencies," he said significantly, and added, "You may rest assured that gasolene will not be overlooked."

Pressed for a more definite expression, Mr. Gallaher merely shook his head. But if a gasolene Mobile car should make its appearance before another year has spent itself it need cause no great surprise.

Goodyear Wins on Appeal.

A second victory has been won by the Goodyear Tire & Rubber Co., Akron, O., in its legal battle with the Consolidated Rubber Tire Co. On Monday the Supreme Court of the United States, sitting at Washington, denied the application for a writ of certiorari made by the Consolidated company against the Goodyear company.

It is the well known Grant patent on solid rubber vehicles tires, owned by the Consolidated Rubber Hire Co., which is in litigation. In May last the United States Court of Appeals for Ohio handed down a sweeping decision, reversing the decisions of the lower courts and holding that the Grant patent was invalid. The decision was as damaging as it was unexpected, and the Consolidated company carried the case to the Supreme Court. As stated, the latter now sustains the decision of the Court of Appeals.

The Kelly-Springfield vehicle tire is made under the Grant patent, which covers the peculiar formation or shape of the tire, the longitudinal wires which hold it to the rim and the chemical in the latter.

Necessity is the mother of invention, but it is not patented either by the maker or the buyer of an automobile.

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RAIN HELD OFF

And Detroit had two Good Days Racing—Some Surprises and Sensations.

Detroit, Mich., Oct. 25.—Perseverence gained its reward at last for "the Rainmakers," as the Detroit Automobile Association had come to be known, were finally enabled to run off their twice postponed races at Grosse Pointe track yesterday and to-day.

For a time it looked as though disappointment once more awaited them, for to-day (Saturday) the "big day" of the meet, opened ominously, the skies being dark and lowering and a few drops of rain actually falling, but happily the clouds cleared away and while the day proved raw and chilly the programme was run practically as scheduled. Some rattling good racing resulted, and when the lateness of the dates are considered, the attendance was surprisingly good and of the enthusiastic kind. The trade was liberally represented and the success of the event was a deserved tribute to William E. Metzer and his popular associates.

The racing furnished several surprises, among them the defeat of the Winton Bullet by both the Cooper racer and H. S. Harkness' Mercedes, due, however, to hard luck, as Mr. Winton could not get his famous flyer going properly, and in consequence made nowhere near his best time.

The Cooper racer, a huge, ungainly looking monster with no compensating gear, roaring and pounding in a fearful way, was driven wildcap fashion by Barney Oldfield, who tore off miles at a terrific clip, establishing a track record of 1.04 1-5 and doing the five miles in 5.28. It seems incredible, but it is asserted by Cooper that Oldfield had never driven any kind of an automobile two days before, and the ex-bicycle rider certainly showed himself a man of nerve.

His performance was a hair-raising one, and local pride in his victory made his win popular.

In the smaller gasolene classes the Elmore, Northern and Olds made a splendid showing, the first named winning the Russell House Cup, the prettiest trophy of the day, while the little Northerns showed a tremendous burst of speed, one of them doing a mile in 1.26 and only prevented from winning the handicap race in which it started by an accident that happily was without serious results.

Alex. Winton, with the Bullet, had just been sent off and had not yet gotten up speed. He came down the track on the outside and at the curve turned sharply toward the pole. Mr. J. D. Maxwell with the Northern, in which he was making a runaway race, came tearing up from behind and, evidently believing that Winton was aiming to take the pole, turned sharply so as to pass him on the outside. Winton, however, instead of dropping into the pole position, turned, as he himself stated to a Motor World man, so as to allow the machines behind him about fifteen feet of room on the inside or pole position. The result was that Maxwell dashed into the Bullet, was thrown with fearful force, his machine turning a complete somersault and being dashed to pieces, while the horrified spectators were relieved a moment later to see Mr. Maxwell pick himself up out of the cloud of dust and walk away unaided, while willing hands hastily gathered up the remains of the wrecked vehicle, getting the track clear before the big machine came tearing around. In passing, it may be said, that it would seem that this accident ought to point a lesson and that a track rule which would be thoroughly understood and which would provide that machines in getting up speed should keep clear to the outside of the track and thus prevent any possible confusion on the part of the driver coming up behind them.

In handicap races, especially where big and little vehicles are in together and there may be drivers of limited track experience, such a rule would make for safety.

The Oldsmobile made a fine showing, annexing the ten miles handicap on Friday and getting first, second and third in the five miles open for vehicles of 5 h.p. and under on Saturday.

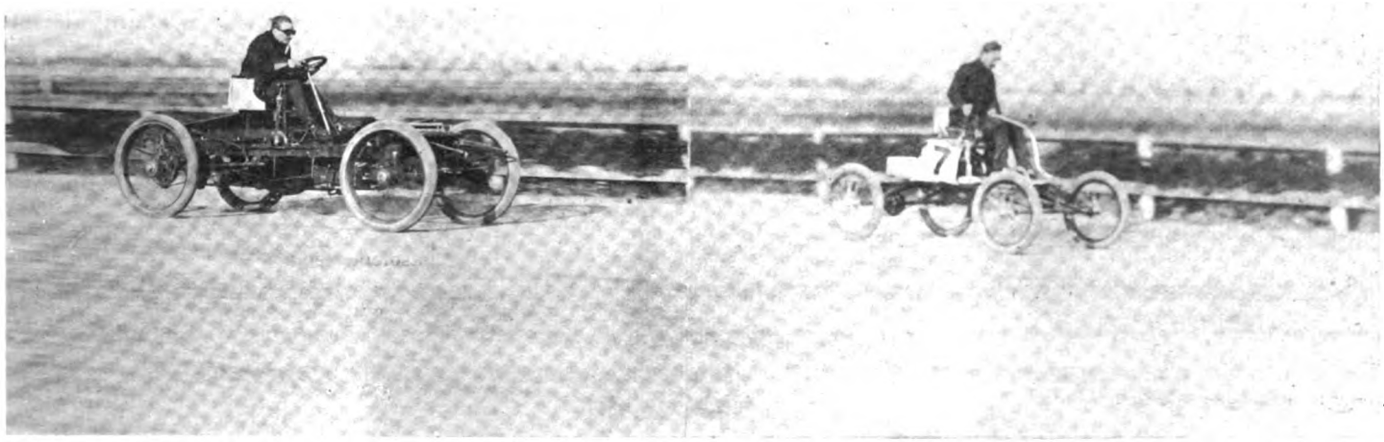
In the steam classes the White as usual cleaned the boards the first day, but on the second for the first time on any track it was forced to be content with second place, a freak machine that the crowd likened to a Mississippi River boat and from the regular smokestack of which issued a long cloud of smoke precisely like that left in the wake of a railroad train, steaming around the track in almost record time. It was not an automobile, being a freak racing craft pure and simple, while the White entry was the regular racer driven by Mr. Windsor T. White and which made the five mile world's record at Cleveland.

In the electrics the Baker car outclassed everything on Friday, winning the two-mile race in 4.14, the 200 yards obstacle race, and on Saturday making world's records for both five and ten miles, setting the figures for the former at 17.58.

All these feats were accomplished with the same runabout with top that Mr. Baker used at Cleveland.

The ease with which Mr. Baker overtook and passed his competitors whenever he got ready called forth admiring remarks, while even after making his record he chased the Bullet for nearly a lap, keeping

(Continued on page 135)

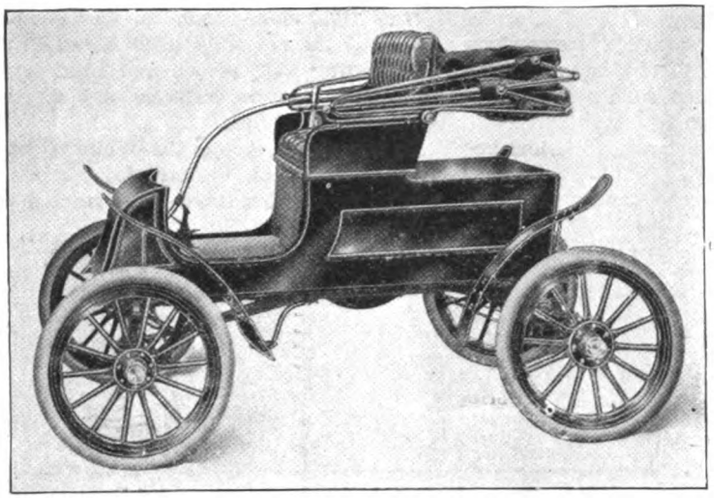


W. C. RANDS IN THE FORD RACER

W. WIGLE IN THE OLDSMOBILE SKELETON.

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and haven't anything else to do when you go riding, you MAY get along in any old automobile. Even then you could make more money by guessing about something else. There will be wrong guesses, and you can't help it.

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And Kindred Interests

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The Old Lie Exploded.

Whenever an autophobe or blatherskite seeks to score a point against the motor vehicle he speaks in affrighted or profound tones of "the appalling list of accidents" due to its use. Some of the more astute or more embittered have been known to bring an accumulation of newspaper clippings in seeming substantiation of their assertions.

It was the continued harping on this string that induced the Motor World to gather and print during the past month its weekly budget of casualties caused by the various means of vehicular locomotion. The itemized record leaves no room for question or dispute, and the recapitulation for the month is one that puts the blatherskites to rout, and that should call to their senses those automobilists who are inclined to be affected by the hue and cry created by the sensationalists and demagogues, and who would sacrifice their birthrights on the altar of expediency.

Far from being appalling, the Motor World record proves the casualties due to motor vehicles to be comparatively insignificant. From September 25 to October 25—the dates embraced in our statistics—they were concerned in but 14 accidents, none of them fatal ones. On the other hand, the horse is chargable with 33 death and 336 injuries, while the railroads killed 425 persons and injured 530; the trolley, 64 and 337 respectively, and the bicycle, 1 and 63—a grand total of 523 killed and 1,280 injured.

Comment cannot add to the impressiveness of these figures.

Learned gentlemen will, of course, bring to bear the law of percentage, but it cannot affect the purpose which we sought to serve—that of combatting with cold facts and figures the much-mouthed and much-written fiction that deals with the "appalling record of the automobile."

The motor vehicle is largely the victim of newspaper headlines. Short of wholesale slaughter the casualties in a railroad or a street car accident are usually dismissed in a dozen lines, the deaths a-horse receive little if any more space, but one death due to an automobile and nothing less than half a column, with big, black headlines on the front page will suffice.

We do not mean to say that the newspaper men do not know their business, but we do mean to say that it is their headlines that have deceived not only the autophobes and blatherskites, but some of the editors themselves.

We have collected the evidence and placed it within the reach of all. Whenever and wherever blatherskites arise it should be used to give them the lie and to stie their rantings.

One Thing That Was Demonstrated.

It may or may not be true that as a direct consequence of the reliability contest a number of sales of delivery wagons were made, with immediate deliveries specified.

But whichever the case may be, it is beyond dispute that such a result should follow the run.

The result of the test was to demonstrate unmistakably that the motor vehicle of today, whether intended for business or pleasure, is, in the hands of a competent operator, as reliable as any drawn by horses. Its greater efficiency is, of course, beyond dispute. But until the run referred to just the contrary was the case as regards its dependability. Claims made for it in the past had not been substantiated, and the bad behavior of some vehicles had caused suspicion to fall on all.

It is time for a new deal, a fresh shuffling of the cards. The motor business wagon is wanted, and wanted badly. Business men everywhere are waiting for it, needing only to be assured that it is what is claimed for it.

The very considerable progress that has been made within the year, the steady though slow increase in the number of practical business vehicles in use, has prepared the way. With the prestige of actual and extended performances to use as a lever the task of convincing hard headed business men that they cannot afford to use horses for hauling their goods should be a much easier one than it has been in the past.

Borne Out by the Result.

Now that the smoke of battle has lifted and we are able to discern, by means of the official or semi-official reports, that the first impressions concerning the reliability contest were correct ones, it is scarcely amiss to congratulate ourselves anew upon the result.

In view of the rigid scrutiny to which the cars for which a flawless record was claimed were subjected, it is matter for surprise—not that the official list contains the names of only seventeen instead of twenty acrs as first listed—but that the list should be so large. There was so much room for error, so many points upon which the rules and the observers could honestly disagree, so many claims and counter claims made, that we cannot do otherwise than express satisfaction at the outcome.

It is interesting to note in passing that of the three cars dropped from our list of twenty cars published the day after the run came to an end, one, a Knox, figures in the other cup winners. The other two, a Stevens-Duryea and a Grout, have been cast out for some as yet unknown reason. The other seventeen cars are exactly as we forecasted

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them, thus verifying in a remarkable manner the accuracy of our report.

These seventeen cars were each given 2,092 marks—the highest number that any car could receive.

That means that throughout the six days of the run these seventeen cars never faltered or failed. Four times a day they reported to the officials, ready to have their time given them or taken, never varying from the schedule mapped out, never making an unpenalized stop, never going wrong from any cause. More convincing performances than these could not be desired, much less made.

If we turn to the other members of the gallant band that went to Boston and back we find scarcely less cause for congratulation.

Three of them—the winners of the Scarritt, Chamberlin and Hill cups, respectively—are credited with having been charged with one bad mark each, with totalling but 2,091 instead of 2,092 points. The stops, be it noted, did not in any case exceed one minute in duration, and at least one of them is said to have been due to the operator's error rather than to any defect in the car itself.

Truly, no more marvellous showing could be made. It speaks volumes for the cars and for the men who drove them.

We have yet to learn the details of the certificate awards, the committee not yet having rendered its report.

But the latest unofficial advices place the number of cars qualifying for first class certificates—an average speed of between twelve and fourteen miles an hour being required—at fifty or more. Of the remainder of the sixty-seven finishing cars a considerable majority are supposed to have won second or third class certificates.

These figures agree very closely to those given in these columns at the close of the contest, and there is every reason to believe that they are approximately correct.

They demonstrate most conclusively that the motor vehicle of to-day is both practical and practicable, and that the time is ripe for it to enter into largely extended use at the hands of those who have been waiting for it to be "perfected."

A Failing Member.

Who that has driven a gasolene car any considerable time has not had forced upon him the disagreeable conviction that his clutch is slipping?

It is inevitable that it should be so. The clutch can no more be used without constant attention and inspection than a bearing can be run without oil; indeed, not as much, for there are not a few people who claim that with certain bearing surfaces lubrication is quite unnecessary.

As it has been so sagely remarked, "Eternal vigilance is the price of success."

So with clutches. They are imperfect devices at best, and nothing but never ending care will ever make them yield the best results.

The chauffeur or mecanicien who neglects his clutch, or gives it only a fair amount of attention, need have no expectation of freedom from trouble. He is literally sowing this commodity, and it is only a matter of very short time when the harvest will be ready and he will begin reaping, whether he would or not.

With a perfect knowledge of this failing of even the best clutches there should come safety; for is it not said that "forewarned is forearmed?" But this safety comes only to the man who labors for it and makes frequent examinations of his clutch to see that it takes hold neither too little nor too much; that it neither slips nor sticks—that, in short, it is properly adjusted whenever the engine is started and the clutch is thrown in.

Thus, and thus only, will immunity from the troubles that were so noticeable during a recent important function be purchased.

Why Not a Round Robin.

Inasmuch as seventeen machines have been figured out to have won equal glory in the New-York-Boston competition, why should the name of any precede the others in the inscription on the cup? In a case like this it would seem to be an excellent thing to revert to a good old custom and so inscribe the names that they will appear in the form of a "round robin."

In olden days when a letter of complaint or protest was to be written to the potentate, no one wanted to be the first to sign the paper, and as a way out of the dilemma the "round robin" was invented. With the names written in a circle, no one has precedence, and each has equal honor.

The suggestion has greater value in connection with President Shattuck's cup because there are two rather small oval spaces on it for inscription. The names laid out in circular form would permit of the use of larger letters and a consequent greater display than would be possible if they were inscribed in horizontal parallel lines. There would seem to be economy of space as well as appropriateness and artistic effect in the adoption of the "round robin" idea for this remarkably won trophy.

Some Light on Air Cooling.

It has been contended by more than one well posted worker in the gasolene engine field that a mistake was made in almost completely abandoning the air cooled motor.

The performance of several cars of this type in the reliability contest, to mention only one item, certainly lends some color to this contention, so far as it has application to the lighter cars. They ran day after day without overheating. We took occasion several times to examine them at the finish of a run, and satisfied ourselves that they were in good order. As regards one of the makes referred to, this was not surprising, for it has been tested sufficiently to set all doubt at rest.

It is probably true that the more powerful or speedy cars must be water jacketed.

But it is not equally certain that the same must be said of the small cars. With them no insuperable objections to air cooling appear: on the contrary, it is beyond dispute that in some small cars air cooling is eminently practical, and it is only a fair proposition that it will be equally satisfactory with others.

It is hardly necessary to call attention to the great advantages that follow upon the use of an air cooled motor.

When freezing weather comes the objections to water jackets are, of course, the greatest. But they differ only in degree in ordinary weather. The much greater complexity of the water cooled motor, with its mass of pipes, connections, tanks, radiating appliances, pumps, etc., is well known, and its capability for giving trouble is in direct ratio thereto.

About the worst of a long list of bad ordinances is the one just introduced in Kansas City and given in full in another column. It provides that both the automobile and its owner or user shall be licensed; that the former shall carry lamps having painted on them in red the license number, and that the owner's initials in letters eight inches in height shall be carried on the sides and rear of the car. It is little wonder that in view of these and other offensive provisions the ordinance should have been denounced by one of the body called upon to legalize it.

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RAIN HELD OFF.

(Continued from page 131.)

on nearly even terms with it, and was heartily cheered.

The machine was absolutely noiseless, ran very smoothly and on each occasion gave a splendid account of itself.

Considerable disappointment was felt at the inability of the new Peerless racer to start against the other big machines. It was at the track, came down once and moved very smoothly, but a cam-clutch slipping precluded it from competing. It was a sore disappointment to L. P. Mooers, who had worked hard to get it ready.

The summary follows:

FRIDAY.

Five mile race for steam road machines. Won by Windsor T. White (White); John McDonald (Geneva), second. Time, 10m. 42s.

Five mile race for gasolene cars; 1,000 pounds or under. Won by J. G. Reiners (Locomobile); J. D. Maxwell (Northern), second; W. Wigle (Oldsmobile), third. Time, 10m. 51 4-5s.

Third Race.—Five miles; 2,000 pounds and under; gasolene vehicles. H. S. Harkness (Mercedes), first. Time, 6m. 1 2-5s. Charles B. Shanks (Winton), also started.

Fourth Race.—Ten mile handicap. J. L. McNamara (Oldsmobile), first, with 61½m. allowance; H. L. Harkness (Mercedes), (1½m.), second; Windsor T. White (White), (3m.), third. Time, 18m. 15 1-5s.

Fifth Race.—Two miles; electric vehicles. W. C. Baker (Baker), first. Time, 4m. 14s.

Sixth Race.—Two hundred yards; obstacle. W. C. Baker (Baker), first.

SATURDAY.

Five mile race; gasolene cars; 1,000 pounds. W. Wigle (Oldsmobile), first; D. B. Huss (Oldsmobile), second. Time, 7m. 50s.

Five mile handicap race; gasolene cars; Detroit; private owners. W. Rocherman (Elmore), (4m. 15s.), first; W. C. Rands (Ford), (scratch), second; J. W. Eddy (Winton), (2m.), third. Time, 8m. 32 4-5s.

Three mile; steam cars. W. C. Buchman (Geneva), first; W. T. White (White), second. Time, 4m. 7 2-5s.

Ten mile handicap. C. B. Shanks (Winton), (2m.), first; H. S. Harkness (Mercedes), (45s.), second; W. T. White (White), (2m. 30s.), third. Time, 13m. 34 2-5s.

Five mile; Manufacturers' Challenge Cup, open only to members of the American Motor League. Barney Oldfield (Cooper), first; C. B. Shanks (Winton), second; W. C. Buchest mile, 1m. 4 1-5s.
man (Geneva), third. Time, 5m. 28s. Fast-

Twenty miles; open. H. S. Harkness (Mercedes), first. A. Winton stopped at end of 10 miles.

The trade was unusually well represented at Detroit, including men from New York, Chicago, Cleveland, Toledo and other places. It was practically the same crowd that was here twice before and the majority of whom had each time pledged themselves to come again when the races were postponed. It is doubtful if there is another man in the trade who could get so many busy men to journey the distance, but "Billy" Metzger is deservedly liked by everyone and it is on his account personally that many of them were there. Of course the local trade were out in force, and in aadition there was noticed Fred White and M. L. Goss of the Baker Motor Vehicle Company, who came over with Mr. Baker. Mr. Goss, as usual, was everywhere, and as he knows about everyone, he was a busy man. Others were F. Philip Dorn, of the American Ball Bearing Company; McCrea, of F. B. Stearns Co.; Treasurer Brown, of the Winton M. C. Co.; Manager Kittredge, of the Peerless Manufacturing Company; E. E. Kirk, George Troup and Charles Hall, of Toledo; . W. Packard, James Becker, W. B. Post, Clarence Whitney, W. H. Kirkpatrick, Benj. Smith, W. L. Githens and many others.

Fred G. Mott, Jr., and E. R. Lozier were in Detroit—together.

One of the new Cadillac cars made its appearance at the track and evoked much favorable comment. It is a handsome appearing vehicle, substantial and yet trim looking, runs with absolutely no noise or vibration, starts without any grinding or noise of clutch engaging, and at the rumored



THE GENEVA "TUG."

price of $750 is likely to prove a sensation in the trade.

This company is very strongly backed and proposes to turn out a large number of vehicles the coming year, and it is known that they are likely to have as sales manager one of the best known and best equipped men in the trade.

The Cadillac looks like a winner and if present plans are carried out the company are bound to become big factors in the automobile industry.

Brooklyn's New Club.

With the incorporation of the Kings County Automobile Club, papers for which were granted last Saturday, a Brooklyn organization of considerable promise enters the automobile field in Brooklyn. This fact was emphasized by Geo. A. Needham, one of the directors, in a conversation with the Motor World man on Wednesday.

"The Kings County Automobile Club will be entirely separate and distinct from the Kings County Wheelmen," he continued. "But we shall meet at the clubhouse of the latter, at 1,255 Bedford avenue, and make use of its facilities for storing, etc. It has a fine clubhouse and grounds, with room to house sixty vehicles, and is in every way suited for our purposes. Many members of the Wheelmen are or will be members of the Automobile Club, and there will be perfect harmony in the organizations."

Two Incidents of the Run.

There were many curious happenings during the reliability run, some of them very funny. One of these was witnessed by the Motor World man at Hartford, during the luncheon at the Allyn House given by the Hartford Rubber Works Co. It was on the up trip, and acquaintanceships were still being made.

"It's all right, of course, for he is as honest as the day, but I had to laugh to see that Thomas B. Jeffery was acting as observer on one of his own cars—a little Rambler runabout," remarked one of about half a dozen men seated at the same table. "The committee that made that assignment must have been easy"——

He got no further, for simultaneously from his right and left hand neighbor came something like this:

"He's nothing of the kind. The car he is in is not entered at all. He is just travelling along with the bunch on his own hook."

And then it came out that the right hand man was the operator of one of the Ramblers that was in the contest, while the left hand one was driving the identical car which Mr. Jeffery was riding in. Consequently each of them knew what he was talking about.

Among the many bits of jollity during the trip there was one occurring at the Cooley House, Springfield, in which a persevering exponent of the Winton carriage and motor had an interesting demonstration of the "motor under the seat" proposition. Approached quietly from behind this persevering disciple of Alexander felt himself suddenly seized by the slack of the trousers and the coat collar. He was then rushed downstairs and into the shiny counter where the liquid joy was dispensed. There the Winton man declined to reproach the other and said frankly that he had enjoyed the trip down the stairs owing to the fact that it left him more than ever convinced that the best place for the motor was under the seat, where the Winton cars have it. What else was said was much interrupted by the gurgling of stopperless bottles.

Suggests a Drastic Remedy.

From Detroit comes the same old story of non-starting entrants To judge by the programme plenty of starters seemed to be assured, especially as all of them were bona fide. When it came to lining up for the starter's pistol, however, there was frequently a very different story to tell.

Owing to the presence of Chairman W. J. Stewart of the race committee of the American Automobile Association, who officiated as referee, drastic measures seem in a fair way of being adopted to cope with the matter. Mr. Stewart's plan is very simple. It is to make it compulsory to post $50 with an entry, the money to be forfeited if the entrant does not appear or refunded if he does.

Bankers in New Quarters.

A lease has been executed by the Banker Bros. Company, under the terms of which the building at 139 and 141 West Thirty-eighth street, this city, passes into their possession. The concern is fitting it up as an automobile station, and moved into it this week.

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THAT QUAKER ORDINANCE

Its Oddities and Absurdities—Board of Boiler Inspections Great Powers.

The best that can be said for the ordinance introduced in the Philadelphia councils regulating the speed of automobiles and other vehicles is that it does contain some provisions framed in the interests of the former. But it also goes very much further in the opposite direction. It imposes so many restrictions, among them being a licensing scheme, under which th owner of any automobile must obtain a certificate from the Bureau of Boiler Inspection, that it is even worse than the present condition of things.

The text of the ordinance, given below for the first time, cannot but add to the surprise that it should have been framed, in part at least, by automobilists themselves. Its salient features follow:

Section 1. The Select and Common Councils of the City of Philadelphia do ordain, That from and after 60 days from the passage of this ordinance no vehicle drawn by animals shall be driven upon the streets or highways of the city of Philadelphia without an attendant at the animal's head or holding the reins, and no power propelled vehicles without a competent attendant in charge at the controlling mechanism.

All vehicles when driven or propelled on the streets or highways, excepting those proceeding at a rate of speed not faster than a walk, shall carry between sunset and sunrise a white light or lights in a conspicuous position, so as to readily be seen from in front, with a red signal which can easily be seen from the rear, and in addition such further signal as may be required for their special classes.

All bicycles or similar vehicles and all vehicles propelled by other than animal power shall be provided with suitable signal that can be distinctly heard a distance of 30 yards, and the drivers shall sound same whenever necessary to warn pedestrians or other vehicles of their approach, but such sounding of signals shall in no way give any special privileges or right of way.

No vehicle propelled by other than animal power shall be left upon the streets or highways without being first arranged so it cannot start by itself and without proper precautions for subduing the noise of the motor, and any one tampering with such vehicle in the absence of the occupants shall be arrested immediately for breach of the peace and disorderly conduct.

No vehicle driven by any other than animal power shall be operated on the streets or highways until a certificate has been procured from the Bureau of Boiler Inspection that the boilers, reservoirs, valves and such parts as are employed for holding steam, or explosive, or inflammable products, or electricity shall be so constructed as to be safe and prevent the escape of such material. Said certificate shall be always carried upon the vehicle for which it has been issued, and the number of the certificate issued by the Bureau of Boiler Inspection placed upon vehicle so that it is plainly visible. An inspection shall be made annually or oftener if necessary by the Bureau of Boiler Inspection, and a fee of one ($1) dollar shall be paid for said inspection.

No vehicle propelled by other than animal power shall be driven on the streets or highways in such a manner as to interfere with other traffic, and the driver or operator shall stop such vehicle, and if necessary shut down the motor of same when requested by the occupant of a vehicle propelled by animal power until such latter vehicle has passed.

All vehicles propelled by other than animal power shall be equipped with good and sufficient brakes which shall be capable of checking the speed of the machine whether going forward or backward, and which shall be so arranged to act independently and directly upon the wheels, so that the failure of any part of the propelling mechanism or gearing shall not affect the action of the brake. They shall also be provided with the necessary appliances, such as steam condensers and mufflers, so as to stop the unnecessary escape of steam or vapor or noise in the operation of said vehicles in the streets or highways.

Any person violating any section of this ordinance shall be subject to a fine of five ($5) dollars for the first offence and ten ($10) dollars for the second offence, and twenty-five ($25) dollars for each additional offence thereafter; said fines to be collected as like fines are now collected by law. Provided, however, that for any excess of speed of any vehicle propelled by other than animal power above that hereinbefore allowed, such offender for the first offence to pay a fine of not less than twenty-five ($25) dollars, and in case of a second offence by the same offender the certificate of the Bureau of Boiler Inspection shall be withdrawn from his machine for the period of three months. But this provision shall not in any way hold to interfere with the criminal prosecution of such offender for his violation of the law.

All ordinances or parts of ordinances inconsistent herewith be and the same are hereby repealed.

Page Sails to Sell Olds Abroad.

With the purpose of carrying the Oldsmobile gospel into foreign lands, Carl H. Page, of this city, sailed on the steamship Minnehahd on Saturday en route for London. His plans are wide reaching, embracing what is virtually a tour of the world. An arrangement has been made with the New York Export & Import Co., which has branches in many foreign countries, to take the trip in their interests, demonstrating the capabilities of the Oldsmobile and making sales wherever possible in the countries controlled by the above concern. From London, Page will go to Marseilles, Genoa, Port Said, through the Red Sea, etc., to Bombay, Delhi, Calcutta and Yokohama to San Francisco, and back to New-oYrk.

DEFEAT FORESHADOWED

L. A. W. License Law Receives a Preliminary Jab—Other Ordinances Considered.

It became quite evident last Friday afternoon how the ordinance requiring the licensing of automobiles that was drawn by a person named Thompson, who claims to represent the L. A. W., is to fare at the hands of the Board of Aldermen. The suave man with deep set eyes and drawling tones who wrote the document is quite likely to be the only one to have any kind word to say for it, unless he has with him on November 7 some associates and friends in the L. A. W.

The symptoms of the nausea which the proposed ordinance has created were manifested on Friday before the law committee of the Board of Aldermen, which was called for the purpose of giving a public hearing on the street sprinkling ordinance and the ordinance to regulate street traffic and permit a speed of ten miles an hour for bicycles and automobiles.

Alderman Armitage Matthews was in the chair, and Alderman Joseph Oatman, who fathered both the ordinances mentioned, was among the committeemen present. J. Bayard, of the Committee of Fifty, was present to oppose the legalizing of a ten mile an hour speed, and J. L. Brower was there to help him. Both told doleful tales of the danger there is now in crossing the streets for women and children. They did not mention that the danger existed years before the advent of the bicycle and the automobile. Mr. Brower said that in London, where there is a speed limit of 12 miles an hour, the people are getting tired of it because the vehicles go faster than that. Mr. Brower did not know that the speed limit in Paris is 20 miles an hour, and the pertinency of the fact that both London and Paris are bigger than New York seemed to entirely escape his mind.

Mr. Bayard, of the Committee of Fifty, said with regard to the automobile license ordinance that his organization had not given it much consideration, but he thought that any such regulation should be a State law. He remarked that if a man in an automobile was required to carry a specific license for every town through which he might wish to travel he would not have any room for baggage in his machine.

The law committee decided to adjourn the hearing on the sprinkling and traffic ordinances until November 7, and to have a hearing on the license ordinance the same day.

Crest Moves Offices.

The offices of the Crest Mfg. Co. have been removed from 424 Massachusetts avenue, Cambridge, Mass., to the factory at Cambridgeport. The company will hereafter occupy the entire building.

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All Characteristis of the Age.

The increasing commercialism of modern life, together with the increased noise, received the attention of Dr. Felix Adler on Sundaya, when he spoke at the meeting of the Society for Ethical Culture at Carnegie Hall, this city.

"In the country," he said, "all is harmonious and peaceful. Even the screech of an owl is noticeable. What a contrast when we are whirled suddenly into a great city, with its clanging bells, rumbling cars, rattling wagons and those new horrors, the automobiles, threatening life and limb.

"But it is all typical of the age. Never before were there so many big cities and so much feverishness and lack of peace on the part of the inhabitants. The world seems to be possessed by the demon of commercialism."

No Trouble About Water Supply.

There was one type of car in the reliability contest that did not have to bother much about its water supply. It is scarcely necessary to say that this was the White.

As a matter of fact, each of the five Whites could have gone through the entire run without replenishing its supply, and they did perform the feat of making no stops for this purpose between controls.

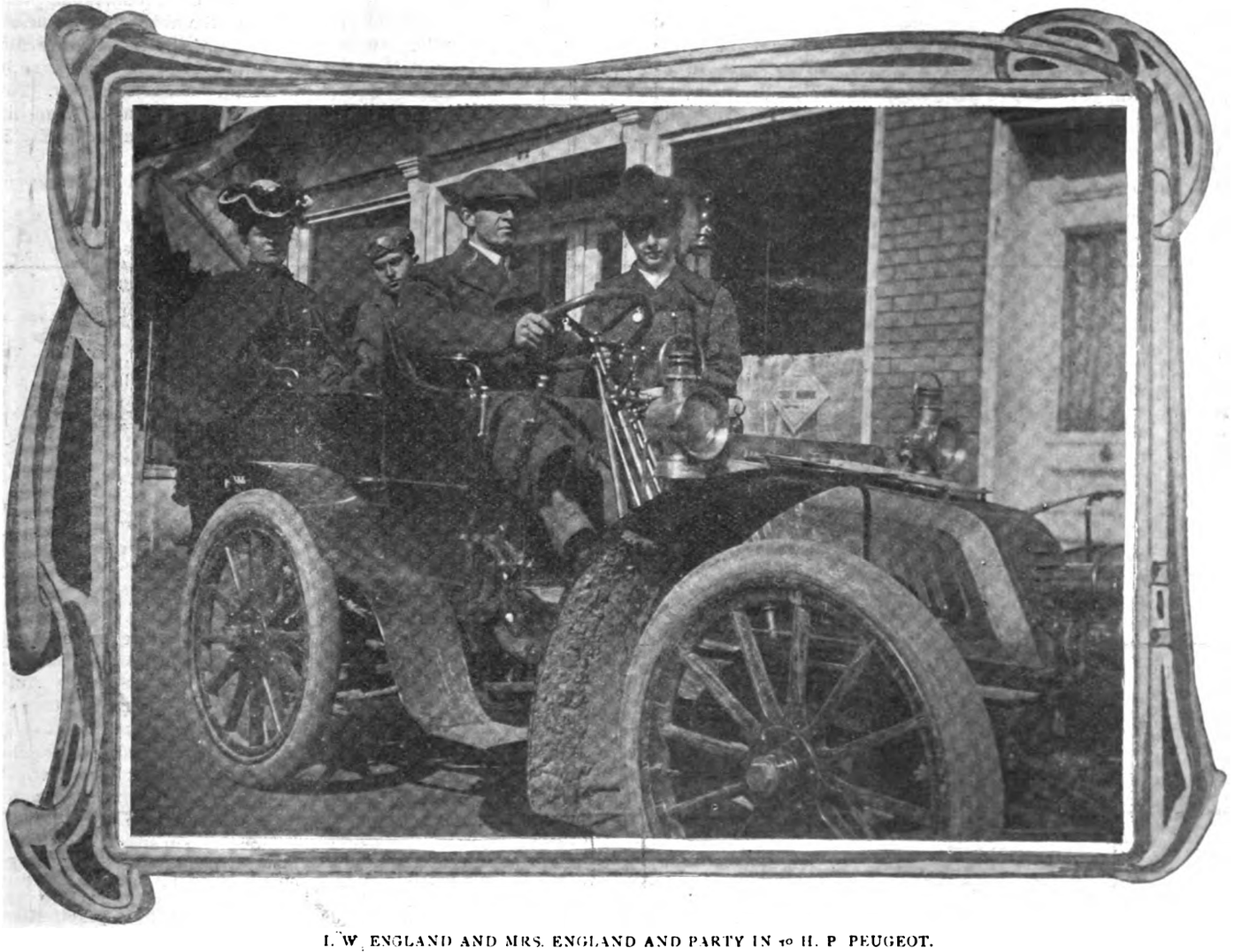
Upon reaching one of the night controls the Motor World man took occasion to ask one of the operators about his water supply.

"I've lost not quite two gallons on to-day's run," was the reply as he peered into the tank. "There is pretty nearly 25 gallons in there now. You see, I only fill the tank once a day, and I need not do it then. But as a matter of precaution I think it best to do so.

Ignored the Evidence.

When in doubt give the automobilist the worst of it seems to be the rule actuating courts and juries just now. At Buffalo, N. Y., last week, in the suit brought by Albert Beinzt, eleven years old, against Walderman J. Schultz for $1,000 damages for running the boy down with an automobile on Genesee street, near Camp street, last July, the jury reported a verdict in favor of the plaintiff for $345.

The plaintiff's guardian claimed Schultz was driving his vehicle at an unlawful rate of speed, and did not give warning to the boy. Schultz's defense was that he was going at not over six miles an hour, that he did sound a warning, and that the boy suddenly darted out from the sidewalk into the path of the machine.



I. W. ENGLAND AND MRS. ENGLAND AND PARTY IN 40 H. P. PEUGEOT.

A more eloquent tribute to the efficiency and reliability of the White condenser, which has been in use the greater part of the season, it would not be easy to obtain.

Give Nuts Equal Tension.

When tightening nuts on to bolts which hold any cast portion of the motor in position great care should be taken, if there are more than one bolt holding the cast portions together, that the nuts are screwed equally. Each nut should be screwed down a little in turn, and not one tightened and then the other. It is also well to remember that most parts of the engine expand as soon as it heats, and that it is quite unneccessary to screw down every nut with a two-foot spanner.

Tampered With the "Bullet."

Close upon the heels of the Detroit races comes the charge that the Winton "Bullet" was tampered with, which accounts for its poor work on the second day. Upon returning to Cleveland an examination was made, and it was discovered, it is said, that the "sparker cam had been fixed so that it would not work when high speed was wanted."

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The Old and the New Conflict.

It was in front of Sherry's Forty-fourth street entrance, at the luncheon hour, when the crush of wheeled and other traffic was at its height.

Biff, bang and biff again it went, as two men engaged in an impromptu but fierce set-to in the middle of the street. The blows fell fast and furious, but most of them were warded off or dodged, and did little damage. Round No. 1 came to an end in less than a minute, and the two men glared at each other while they recovered their breath. The Motor World man wondered what it was all about. He was soon enlightened.

"I got out of your way when you asked me to," said one, a coachman, young, but burly and apparently as "hard as nails." "You needn't think that you fellows own the streets just because you drive automobiles."

"Aw, go on, and don't block up the road again," returned his opponent, a smaller man, but with lots of nerve and science.

At that the first one jumped in again more fiercely than ever, and strove to get his opponent's head "in chancery." Unsuccessful in this a number of stiff body punches were exchanged. These were taken unflinchingly, but each man guarded his face with grim determination, evidently mindful of his appearance. Before any damage had been done an attendant from Sherry's came over and separated the two, still muttering and glowering.

To a bunch of sympathizing cronies the coachman related his story, while he picked up his greatcoat and hat from a finely appointed landau with a high stepping pair of horses. Then he took his seat on the box and waited, immaculate apparently, for his mistress to appear. The other man climbed into his perch on one of the bix four wheeled cabs and made audible comments on the "cheekiness" of "them horse coachmen."

And the battle between the conservative and the radical, the old order and the new, came to a rather unsatisfactory end.

Good Racing at Toledo.

Toledo, O., had its first taste of automobile racing on Tuesday, and evinced a decided liking for it. The weather was anything but pleasant, being very cold, with a disagreeable wind blowing across the track.

H. S. Harkness and L. P. Mooers took turns at beating each other, while a special match race between Oldfield and Cooper resulted in a victory for the former. The results follow:

Five miles, gasolene cars, 1,000 pounds or less—Won by W. Wigle, Olds, Detroit; E. Z. Koch, Olds, Toledo, second; B. C. Gamble, Olds, Toledo, third; Ed Affleck, Olds, Toledo, fourth. Time, 9m. 12s.

Five miles, gasolene machines, 2,000 pounds or less—Won by H. S. Harkness, Peerless, Cleveland; L. P. Mooers, Peerless, Cleveland, second; Carl Fisher, Winton, Indianapolis, third. Time, 9m. 53s.

Five mile handicap, open—Won by L. P. Mooers, Peerless, Cleveland (scratch); H. S. Harkness, Peerless, Cleveland (1m.), second; Carl Fisher, Winton (1m. 30s.), third. Time, 7m. 14s.

Five mile match race—Won by Oldfield; Cooper, second.

Demand for Storage Places.

The great increase in the number of automobiles owned by New Yorkers and stored in this city has brought about a condition of affairs which has an interesting and important bearing on the industry.

Automobile storage stations, as a rule, have all the vehicles they can care for, and still the number of automobiles increases rapidly every day. To meet this demand a number of new stations are about to be opened, and have already enough business promised to place them on a paying basis.

It is difficult to find properties that answer all the requirements for a successful automobile station. In the first place, the location must be central, then there must be a large and accessible floor space, solid fireproof construction and a rental that is not absolutely exhorbitant.

Proposed Danish Regulations.

Danish autophobes have got in their deadly work, to judge by an extraordinary bill to regulate the circulation of automobiles which has been placed before the Rigsdag. According to this, automobiles must go at a maximum pace of only six miles in towns and eight miles on the main roads in the country, and driving is totally prohibited on roads not over nine metres wide and on the Strandvej, running from Copenhagen along the Sound to Elsinore, through all the smart bathing and watering places.

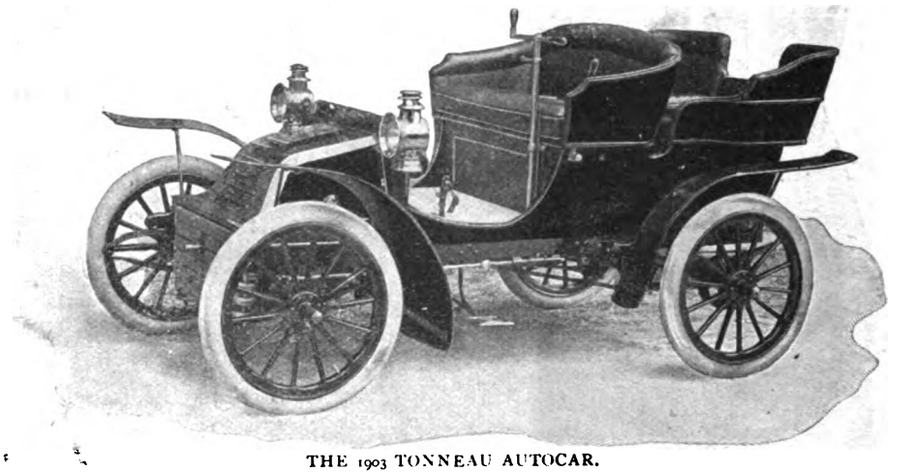
Furthermore, the bill prescribes that an automobile driver must stop any time he meets horses which are "supposed" to be frightened. If the bill becomes law it will surely kill all automobile sport in that country in a short time. Electric and other noiseless carriages, as well as motocycles, are all placed under the ban in the same category.

The New Tonneau Autocar.

It is very much improved and reinvigorated Autocar Company that is busily engaged at Ardmore, Pa., in preparing for the 1903 season. A number of changes have taken place in the concern, almost amounting to a reconstruction, and a most aggressive policy will be carried through in future. The financial standing of the company is of the most substantial character, and insures the undoubted success of its undertakings.

For some months also the factory arrangements have been undergoing radical changes. Under the able supervision of the well-known John C. Spiers, the machinery and other labor saving appliances have been brought to a high state of efficiency. To-day the plant is one of the most finely appointed in the United States. It has a capacity of 15 cars per week.

For 1903 the Autocar Co. is putting out as one of its models an attractive looking tonneau body car, styled Type VIII, Model A.



THE 1903 TONNEAU AUTOCAR.

This car is equipped with the Autocar Co.'s double cylinder horizontal motor, which develops 10 horse power at a speed of 1,000 revolutions per minute, and has aluminum crank case, excluding dirt and dust. The crank shaft is set at 180 degrees, practically eliminating vibration; the fly wheels are double. Ignition—jump spark.

A vaporizer of the float feed type is used, having the throttle and mixing valve combined, insuring a perfect mixture at all speeds, the throttle acting practically the same as in the steam engine.

There are three speeds forward and one reverse, with slide gears of drop forged steel Harveyized, encased in aluminum. Speed of car forward from 2 to 25 miles per hour—reverse, 6 miles. The drive from the transmission case to rear axle is by means of two steel cardan joints, hardened, with shaft, driving a bevel bronze gear.

The wheels are 30 inches wooden artillery patern, fitted with 3 inch double tube detachable pneumatic tires.

There are three brakes in all, two of which are applied to the two rear wheels direct. Gasolene and water capacity for two hundred miles over average roads. Circulation of water by means of a centrifugal pump, chain driven, insuring perfect circulation.

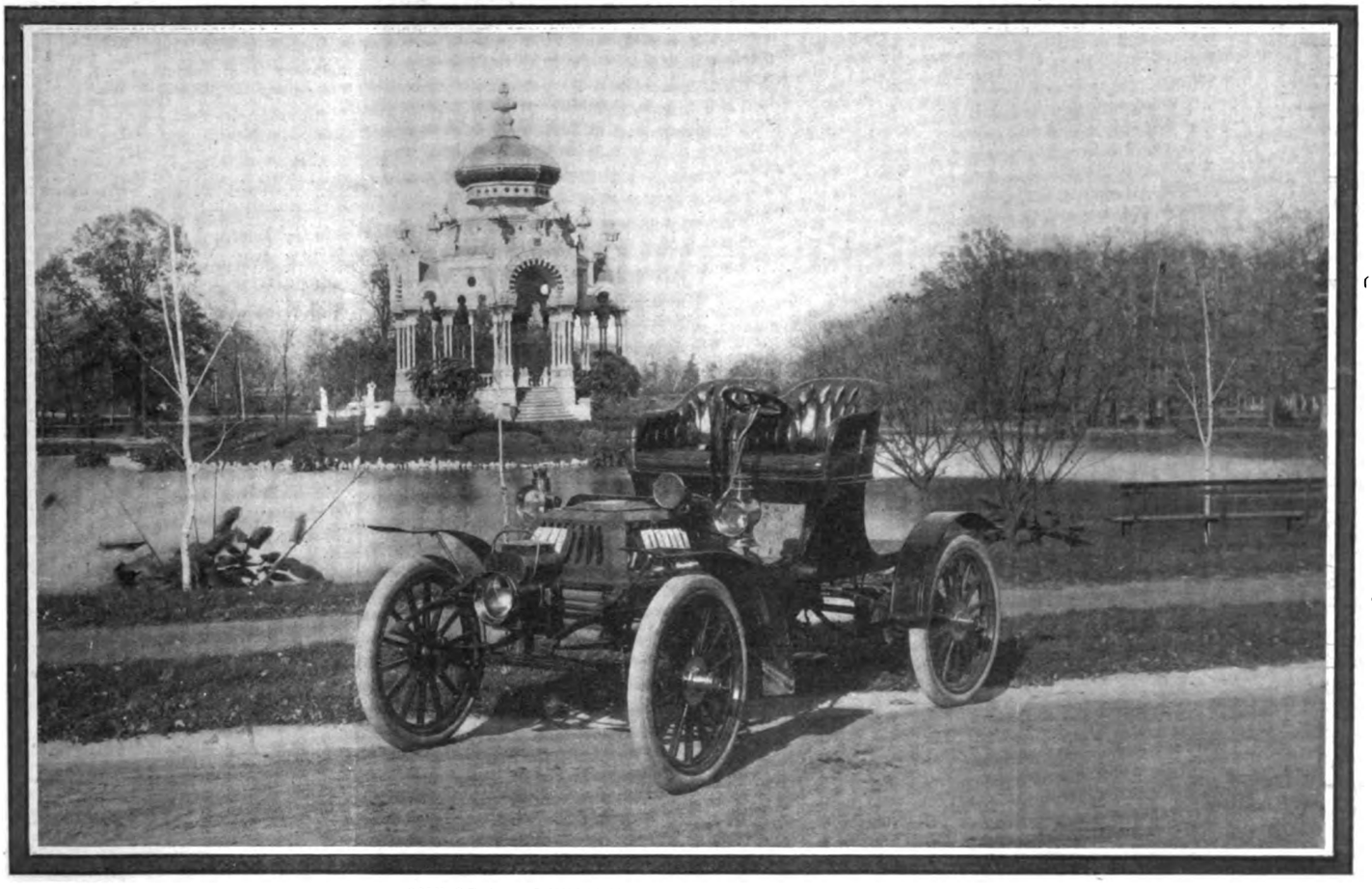
The car weighs 1,500 lbs., and is priced at $1,700. It is finished in red, with red trimmings; also in green, with green trimmings, with black and gold striping.

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Kansas City's Ordinance.

So oppressive are the provisions of the automobile speed ordinance just introduced in the Kansas City, Mo., Board of Aldermen that one member of that body felt impelled to condemn it in unmeasured terms.

This was Alderman Greenlee, who protested against the automobile being made a victim of unreasoning prejudice. "I don't see," he said, with considerable vehemence, "why we should legislate an up-to-date pleasure vehicle out of existence. The people who run these machines are not law breakers; they are business men. All of the prejudice against them is the outgrowth of the carelessness of one man. The automobile is an improved and expensive pleasure vehicle. This ordinance carries us back to the speed regulations of the old horse car. If a man cannot travel faster than a dray wagon what use is a vehicle? How would people like it to have twelve-inch numbers painted on their buggies and victorias?"



ONE OF A. L. DYKE'S NO. 1 CARS IN A PICTURESQUE SETTING.

The ordinance is as follows:

Section 1—No person shall ride, drive, run or cause to be ridden, driven or run any bicycle, tricycle, tandem bicycle, automobile, locomobile, horseless carriage or any other vehicle propelled by foot, steam, gas, gasolene or electricity, upon or along any of the public streets, avenues, boulevards, highways or other public places of this city within the following described district at a greater rate of speed than eight miles per hour. A district bounded on the north by Fourth street, on the west by Hickory street, on the south by Nineteenth street and on the east by Cleveland avenue. And no person shall ride or drive, or cause to be ridden or driven any such vehicle upon any public street or highway of this city at a rate of speed exceeding ten miles per hour outside of the district above described, or ride or drive, or cause to be ridden or driven, any such vehicle in such a manner as to come in collision with or strike any other object or person upon the street.

Sec. 2—No person shall ride or drive any bicycle, tricycle, or tandem bicycle as aforesaid in the night without having attached to the front of the same a lighted lamp that can be distinctly seen at a distance of at least fifty feet; and no person shall ride, drive or run, or cause the same to be done, any automobile, locomobile, or horseless carriage as aforesaid in the night without having fixed conspicuously on each side thereof a lighted lamp with plain glass front and side and clearly visible at a distance of at least 100 feet. Said lamps shall be permanently fixed to said vehicle and be carried (not lighted) during the day.

Sec. 3—No person owning or having control or charge of any automobile, locomobile or horseless carriage shall be permitted to drive or run the same upon any public street or thoroughfare of this city unless such vehicle has been registered in the owner's name with the city license inspector, and has the register number painted in red and legible figures at least one inch long upon the front and side of each of the lamps of said vehicle and has said number painted or printed in which upon black background in legible figures at least eight inches in height upon the rear of the bed or body of such vehicle.

Sec. 4—No chauffeur or other person shall run, control or have charge of any automobile or horseless carriage upon the public streets of this city, who is not a duly licensed chauffeur as hereinafter provided.

Sec. 5—It shall be the duty of the Board of Engineers of this city to license such persons as chauffeurs as shall upon examination by said board be found to have the capacity, skill, experience and habits of sobriety requisite to perform the duties of chauffeur. Said Board of Engineers shall grant such license for the same period of time, and in the same manner in all respects as engineers' licenses, except that a fee of $3 shall be charged for each license and a fee of $1 for each renewal thereof.

Sec. 6—Every chauffeur, whenever upon any public street or way and approaching any vehicle drawn by a horse or horses, or any horse upon which any person is riding, shall operate, manage and control such automobile, locomobile or horseless carriage in such a manner as to exercise every reasonable precaution to prevent the frightening of any such horse or horses, and to insure the safety and protection of any person riding or driving the same.

Sec. 7—Upon approaching a crossing of intersecting ways, and also upon traversing the crossing or intersection the person in control of an automobile or horseless carriage shall run it at a rate of speed less than that above specified, and not greater than is reasonable and proper, having regard to the traffic and the use of the intersecting ways.

Sec. 8—Any person violating, neglecting or refusing to comply with the provisions of this ordinance shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined not less than $1 nor more than $500 for each and every offense.

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RECAPITULATION OF THE MONTH'S CASUALTY RECORD

RAILROADS {Killed, 425. Injured, 530.} TROLLEYS {Killed, 64. Injured, 337.} HORSES {Killed, 33. Injured, 336.} BICYCLES {Killed, 1. Injured, 63.} AUTOMOBILES {Killed, 0. Injured, 14.}

THE CASUALTIES OF THE WEEK

RAILROADS {Killed, 148 Injured, 245.} TROLLEYS {Killed, 20. Injured, 105.} HORSES {Killed, 10. Injured, 146.} BICYCLES {Killed, 0. Injured, 27.} AUTOMOBILES {Killed, 0. Injured, 7.}

175 KILLED.——TOTAL THIS WEEK——530 INJURED.

PRIOR TO OCTOBER 20.

Stockbridge, Mass., Thomas Mercer, killed by cars.....Chelsea, Mass., Mrs. Horace Taylor, injured by bicycle.....Brockton, Mass., Nelson Aldrich, fell from bicycle; arm broken.....Lowell, Mass., Joseph Watts, injured by fall from bicycle.....Pueblo, Colo., Eugene Soan, probably fataaly injured by train.....Montreal, Que., Albert Durocher (8), injured by cab.....Montreal, Que., Arthur Cyr, injured by train.....Toronto, Ont., Herbert Stephen (3), injured by wagon.....Omaha, Neb., car struck coal wagon; A. Mathias injured.....Albright, Neb., Willis Brown, fatally injured by train.....San Francisco, Cal., Wm. Bridgeman, fell from bicycle; scalp wound.....Santa Rosa, Cal., Frank Rhoads, injured by fall from bicycle.....Lakeville, Cal., colliscion; Engineer Jodon killed; Fireman Cline seriously injured.....Kansas City, Mo., Frank Albert, struck by trolley; may die.....Rock Island, Ia., T. H. Bivans, struck by train; lost leg.....Champaign, Ill., Martin Herman, killed by train.....Detroit, Mich., Roy Canner (5), injured by train.....Grand Rapids, Mich., George E. Pegg, perhaps fatally injured by engine.....Chicago, Ill., George Rehm, killed on railroad.....Iron Mountain, Mich., Paul Carli, killed by train.....Chicago, Ill., Mrs. Ida Gross, killed by trolley car.....Cincinnati, O., Rudolph Beist, hurt in runaway.....Loveland, O., Mr. Laveston, killed by train.....Marion, O., Thomas Martin, injured by train.....Hamilton, O., Mrs. Catherine Gebhart, killed, and Abraham Williamson probably fatally injured by train.....Crestline, O., Peter Frey, injured by train.....Paris, Ky., three trainmen injured in wreck.....Portsmouth, O., wreck; two trainmen injured.....Lynn, Mass., John Kiernan, killed by train.....Owensboro, Ky., Miss Satterfield, injured by fall from buggy.....Wheeling, W. Va., Engineer Burke injured in wreck.....Braddock, Pa., Mrs. E. Cohan, killed by train .....Johnstown, Pa., Steve Polaz, killed, and another foreigner probably fatally injured by engine.....Hazelton, Pa., Ray Mack, killed by train.....Scranton, Pa., Lizzie Richards (3), injured by carriage.....Keating, Pa., Mrs. Lizzie Kowatt, probably fataaly injured by train.....Erie, Pa., Frank Rilling, killed by train striking carriage.....Sharon, Pa., runaway; two injured.....Pittsburg, Pa., John Lyons (9), struck by trolley; ankle fractured.....Lynn, Mass., two injured on handcar.....Chester, Del., John Brown (14), struck by trolley; may die.....Central Falls, R. I., trolley struck wagon; Thomas Conway injured.....Charlestown, Mass., Wm. Bartlett, injured by fall from bicycle.....Hudson, Mass., Miss Annie Reddy, injured in runaway.....Forest Hills, Mass., Wm. Mullen, fell from bicycle; skull fractured.....South Boston, Mass., Walter Cole (4), injured by buggy.....Lynn, Mass., John J. Fallon, thrown from bicycle; arm broken.....Everett, Mass., Miss Nora Murphy, seriously injured in railroad collision .....South Boston, Mass., Francis V. Foley (9), struck by trolley; arm severed at elbow.....Berlin, Conn., James Doyle, killed by train.....Waterbury, Conn., Mrs. F. U. Higgins and little daughter, injured by wagon.....Ansonia, Conn., John Ewing, injured by fall from bicycle.....Jersey City, N. J., Walter Natton (9), killed by trolley.....Jersey City, N. J., Mary Logan (10), injured by trolley.....Elizabeth, N. J., Harold Meehan (10), injured by trolley.....Hudson, N. J., Nicholas Capone, injured while boarding car .....Buffalo, N. Y., Wm. Walker, injured by trolley.....Waterbury, Conn., trolley and train collision; about twenty injured.....Schenestady, N. Y., Herman Friedman, killed by trolley.....North Tonawanda, N. Y., John Kinzly, struck by trolley; may die.....Watkins, N. Y., John H. Reed, injured by trolley.....West Lynn, Mass., Leo J. Broderick, injured by wagon.....Lowell, Mass., James Daly, injured by fall from wagon .....Pine Valley, N. Y., three trainmen injured in wreck.....Buffalo, N. Y., Michael Sodarski, injured by train.....North Tonawanda, N. Y., child injured in runaway.....Buffalo, N. Y.. Wilfred H. Mills (9), injured by heavy wagon .....Dunkirk, N. Y., Valentine J. Miller, injured by wagon.....Paterson, N. J., Wm. Mercer, injured by jumping from train.....Uniontown, Pa., Jack DeBolt, injured in runaway.....Lower Providence, Pa., Rev. Theodore Heysham, injured by fall from wagon.....Warren, Pa., Miss Frances Gutzler, injured in runaway.....Mahanoy City, Pa., George ONlickney (14), killed by train.....Pittsburg, Pa., two injured in trolley collision.....Pittsburg, Pa., unknown man killed by trolley.....Philadelphia, Pa., two children injured by collision of wagons.....Philadelphia, Pa., trolley struck wagon; one killed and two seriously injured.....Philadelphia, Pa., James Kelly, injured by trolley striking wagon; may die.....McKinney, Tex., James Brannon, killed by train.....Fort Worth, Tex., W. D. Murphy, killed by train.....Ramsey, Va., two killed, one injured in collision.....Cincinnati, O., two men injured in runaway.....Cincinnati, O., two ladies injured in runaway.....Cincinnati, O., Mrs. Wm. C. Lawson, seriously injured in runaway.....Ironton, O., Charles Davidson and Henry Geswine, killed, and Frank Geswine seriously injured by train.....Newark, O., boy injured in runaway.....Cincinnati, O., Harry Morrison, thrown from bicycle; arm broken.....Findlay, O., Reuben Workheiser, injured by horse.....Frankfort, Ind., L. S. Lytle, killed by train.....Deer Creek, Ill., Robert Bogardus, injured by horse.....Wesley City, Ill., Harry Klicker, struck by train; may die.....Chicago, Ill., Mrs. Hattie Keyes and infant, injured by cab.....Leverett, Ill., Vacaro Votisano, killed by train.....Chicago, Ill., Mrs. Paul Gross, killed by trolley.....Menominee, Mich., George Blinkham, seriously injured by engine.....Fort Madison, Ia., Wm. Saunders, seriously injured by engine.....Davenport, Ia., three trainmen injured.....Seattle, Wash., Wm. C. Foster, struck by team; scalp wound and broken arm.....Independence, Ore., Mr. and Mrs. Whiteaker, injured in runaway.....Kalama, Wash., Albert Dray, killed by train.....Janesville, Wis., Frederick Ahlgrim, killed by train.....Sparta, Wis., Fireman Davis, killed, and three trainmen injured in wreck.....Northfield, Vt., Earl Prince, injured by horse.....San Diego, Call., two ladies injured in runaway.....Missoula, Mont., G. Dahlberg, injured by train.....Waterbury, Conn., Mrs. Knickerbocker and Mrs. Ney, injured in runaway.....Corning, N. Y., Merrell W. Cooney, killed by train.....Salt Lake City, Utah., two injured in trolley collision.....Los Angeles, Cal., Albert H. Smith, cyclist, struck by trolley; scalp wound.....Woodstock, Ont., Edward Cuthbertson, killed by train.....Red Cliff, Colo., unknown man killed, two trainmen injured.....Waldoboro, Neb., James A. Trowbridge, thrown from carriage; may die..... Aurora, Neb., Frank Feinster, probably fatally injured in runaway; Fred Jeffers also hurt..... Omaha, Neb., Andrew Svec, killed by train..... ONmaha, Neb., car struck wagon; D. A. Linhart injured.....Manchester, N. H., Claude Tucker, injured by horse.....Beachmont, Mass., Ottie Brogi, injured by cyclist.....Worcester, Mass., twelve injured in trolley collision; two may die.....Millbury, Mass., car struck buggy; John W. Ashton injured.....Taunton, Mass., car struck wagon; child killed.....Worcester, Mass., two men thrown from carriage and injured.....Fresh Pond, Mass., Charles Clarke, fell from engine; may die.....Housatonic, Mass., William Winchell, thrown from bicycle; fractured wrist.....Plainville, Conn., A. E. Grover, seriously injured by fall from trolley car..... Brockton, Mass., motorman injured in trolley collision.....Middlebury, Vt., Marcus Carr, injured in runaway.....Waltham, Mass., Henry J. Leck struck by trolley; may die.....Boston, Mass., Wm. Cullinane (14), injured by runaway horse.....Woburn, Mass., car struck team; driver hurt.....Greensboro, Ga., Price Orr, killed by train.....Gallipolis, O., A. M. Calhoun, injured by wagon.....Jefferson, O., Mrs. Fred Strong and baby, injured by cyclist.....Cleveland, O., trolley struck truck; driver seriously injured.....Perrysburg, O., Frank Roneau and sister, injured in runaway.....Guilford, Ind., train struck buggy; Mrs. Miller and child killed; Mr. Miller may die.....Indianapolis, Ind., bicycle collision; Miss Collins probably fatally injured; Andrew Jackson badly hurt.....Warren, Ind., two injured in runaway.....Lafayette, Ind., several injured in trolley collision..... Chicago, Ill., trolley struck buggy; Armie Schauer (15), killed, and his brother injured..... Chicago, Ill., trolley struck wagon, injuring Martin Aardna.....Pawtucket, R. I., car struck wagon; woman and child injured.....Providence, R. I., car struck wagon, badly injuring driver.....Jefferson, Md., Mrs. Franklin L. Bowlus, thrown from vehicle; arm broken..... Limestone, Pa., two trainmen injured in collision.....Covington, Va., two injured in runaway.....Richmond, Va., Wm. L. Finegan, injured while boarding car.....Danville, Va., Charles Hedrick, died from injuries received on railroad.....Rockingham, N. C., one trainman killed, two fatally injured in collision.....Dennison, Tex., railroad wreck; switchman hurt; passenger seriously injured.....Lawrenceburg, Ky., wreck; ten seriously injured.....Lexington, Ky., Miss Mary Bouldin, injured in car collision .....Austerlitz, Ky., wreck; several trainmen injured.....Mt. Sterling, Ky., Chief of Police Wilson jumped from buggy; leg fractured..... Medina, O., Allen Riley, killed by train..... HNaselton, O., unknown man struck by train; lost both legs.....Cincinnati, O., Richard Thienemann, killed by train.....Columbus, O., Harry Stewart, killed by train.....East Liverpool, O., a dozen injured in collision.....Des Moines, Ia., car struck wagon; Mr. C. W. Patti injured.....St. Joseph, Mo., ten persons hurt in railroad collision.....Kansas City, Mo., Frank Albert, struck by trolley; died from injuries..... Joplin, Mo., NSam Wood, killed by train..... Milwaukee, Wis., Daniel Shields, killed by engine.....Brazil, Ind., John Heller, killed by engine.....Wilkesbarre, Pa., Wm. H. Phillips, killed by train.....Poplar Bluff, Mo., fireman killed and engineer badly injured in wreck..... Transfer, Pa., A. H. Stafford, struck by engine; lost arm.....Norristown, Pa., Patrick Rogers, seriously injured by train.....Halifax, N. S., Alfred G. Morrison, injured by trolley; lost leg .....Buffalo, N. Y., Mr. and Mrs. John Hare, injured in runaway.....Buffalo, N. Y., collision; baggageman slightly injured.....North Tonawanda, N. Y., Mrs. Fred Ackerman, seriously injured in runaway.....Kirkwood, N. Y., Wm. Conklin, killed by train.....Dunkirk, N. Y., August Stier, killed by train.....Pittsburg, Pa., Wm. A. Lane, killed by train.....Pittsburg, Pa.,unknown man killed by trolley.....Ostrander, Wash., Albert Dray, killed by train..... Hornellsville, N. Y., Benjamin Hill, killed by train.....Great Falls, Mont., Thos. Cullerton, killed, and John Dunbar injured on railroad..... Elmira, N. Y., M. D. Murphy, injured in railroad yards.....Albany, N. Y., Miss Caroline Krause, fell from trolley; fractured leg..... Philadelphia, Pa., Mrs. Margaret V. Hovey, injured by trolley.....Brown Station, Pa., motorman and conductor injured in trolley collision. .....Philadelphia, Pa., Edward Long (9), injured by wagon.....Amsbrey, Pa., Harvey Mullen, killed by train.....Williamsport, Pa., Clarence Willits, killed by train.....Newark, N. J., trolley struck wagon; motorman seriously injured.....Newark, N. J., Frank Smith, injured by fall from trolley.....Washington, N. J., Jesse Omick, killed by train.....Woodbury, N. J., Thos. Penn, killed by train.....Joplin, Mo., Elmer Ellis (9), injured by runaway horse..... St. Louis, Mo., James W. Brennan, knocked from buggy by trolley; fractured hip.....St. Louis, Mo., four injured in trolley accident..... St. Louis, Mo., trolley struck buggy; three injured.....Cincinnati, Ia., Claude Powell, injured by train.....Charlton, Ia., Geo. Wilson (8), severely injured by train.....Cedar Rapids, Ia., two injured in railroad accident.....Lake Crystal, Minn., six injured in collision..... Milwaukee, Wis., Edward Strauss, injured in collision of trolley and carriage.....Milwaukee, Wis., trolley and buggy collided; Frank Schalkafski injured.

Bozeman, Mont., Moses Decker, injured in runaway.....Santa Rosa, Cal., train struck wagon; Farmer Warner may die.....Los Angeles, Cal., collision; engineer and fireman injured.....Bakersfield, Cal., three tramps killed in wreck..... Peoria, Ill., Walter Baumbach, injured by fall from horse.....Terre Haute, Ind., Anthony Haven, killed in collision.....Olean, N. Y., John L. Snell, killed by train.....Indianapolis, Ind., Wm. Hopkins, killed by train.....Indianapolis, Ind., Miss Grace Overly, killed by train..... Toronto, Ont., Gladys Eastmure (10), killed by

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trolley.....Athol, Mass., Jos. Garbarino (10), injured by train.

Detroit, Mich., Mrs. Bailey killed and her son badly injured by train. Croswell, Mich., S. Mudge killed on railroad. Detroit, Mich., Samuel Woodwiss, seriously injured by trolley; Rowland Harter (8), thrown from horse; arm broken. Detroit, Mich., E. W. Haustein, injured by horse. Delray, Mich., Charles Lapham, killed by train. Indianapolis, Ind., Mrs. Mollie Thayer, cyclist, injured by colliding with buggy. Cleveland, O., William Fitzsimmons, killed by train. Hamilton, O., Harry Lowry, injured by train. Lancaster, O., Miss Ella Logan, injured by cyclist. Cleveland, O., Francis Adams, killed by train. Bucyrus, O., Westley Scott, killed in runaway. Cleveland, O., Fred Reinke, injured by engine. Easley, S. C., R. D. Harbin, injured by train. Cordova, Ala., L. P. Porter, injured by train; may die. Hamlet, N. C., William Edens, killed by train. Davis, W. Va., Daniel Lewis, killed by train. Salem, Va., Grover Aliff, killed by train. New Castle, Del., John McCaffery, killed by train. Wilmington, Del., Delphia Pyle (9), killed by trolley. Washington, D. C., Andrew Droun, injured by fall from moving car. Windber, Pa., T. Edward Hamel, killed on railroad. Bellevernon, Pa., runaway; three injured; two may die. Parsons, Kan., wreck; engineer injured. Danville, Pa., Mrs. Frank Cleash, injured in runaway. Kruger's Station, Pa., Terence Kerrigan, killed by train. Mount Union, Pa., Ira Smith (10), injured by train; lost both legs. Bernardsville, N. J., Mr. and Mrs. Young, injured in runaway. Elizabeth, N. J., man injured in trolley accident. Elizabeth, N. J., William Reck, injured by a fall from trolley. Montclair, N. J., John Griffiths, severely injured in runaway. Elizabeth, N. J., trolley and carriage collision; Mrs. E. S. French, seriously injured. Syracuse, N. Y., Joseph Buyanowski (7), killed by train. Fairport, N. Y. Guiseppe Giovannazzo, killed by train. Gallatin, Tenn., Mrs. Green Harris, seriously injured in runaway. Rochester, N. Y., runaway; Fred Yeomans and J. G. Morrissey, badly injured. Warwick, N. Y., Engineer Olds, killed in collision. Amsterdam, N. Y., unknown man killed by train. Tupper Lake Junction, N. Y., John Peters, killed by train. Rochester, N. Y., Naron Lyons, injured by train; lost leg. Van Buren, N. Y., John Kopp, killed by train. Punxsutawney, Pa., John Austin, fatally injured by train. Trenton, N. J., runaway; three injured. Providence, R. I., Mrs. Collins and Miss Conley, hurt in runaway. Woonsocket, R. I., Angelo H. Adams, injured by fall from bicycle. St. Albans, Vt., Frank Landry, injured by wagon. Torrington, Conn., train struck wagon; two injured. Guilford, Conn., Henry Garvey, struck by train; leg broken. Edward Sheehan, cyclist, injured by wagon. Northampton, Mass., boy injured by horse. Cambridge, Mass., Irving Badger (13), cyclist, injured by team. Leominster, Mass., Joseph Gallup, fell from bicycle; dislocated shoulder. Springfield, Mass., Floryan Wegiel, killed by train. North Attleboro, Mass., man injured in runaway. Ware, Mass., W. E. Swindell, perhaps fatally injured in trolley collision; two others hurt. Ipswich, Mass., Moses Webber, injured by horse. Monson, Mass., Miss Grace Moore, injured by fall from bicycle. Brandon, Vt., three injured in runaway. Burlington, Neb., Edward O'Mara, seriously injured by horse. Preston, Ont., Claude Clare (15), killed by trolley. Corinth, N. Y., Mrs. Katherine Brewer, struck by train; leg fractured. Long Branch, N. J., James Pierce, injured in runaway. Providence, R. I., Frank Collins (12), injured by trolley. Kansas City, Mo., William Sprinkle, injured by trolley. Kansas City, Mo., car struck wagon; J. M. Harris, injured. Kansas City, Mo., engineer killed and two trainmen injured by train. Belleville, Kan., Joseph Webb, killed. Brainerd, Minn., several injured in collision. Dow City Ia., man killed by train. Corliss, Wis., Peter Peterson, killed by train. Terre Haute, Ind., Martin Hewald, killed by train. Louisville, Ky., Clate I. Bates, killed by fall from train. Indianapolis, Ind., Ivor Ward (5), injured by wagon. Valparaiso, Ind., Lulan Collins, killed by train. Grand Rapids, Mich., car struck buggy; Daniel Biddleman, injured. Detroit, Mich., Annie Van Zandt, killed by trolley. Jackson, Mich., A. C. Norton, injured by car. Elliston, O., Fred Lutz, injured by train; lost foot. Toledo, O., Louis C. Moench, killed by train. Guthrie, Okla., man jumped from train; killed. Atlanta, Ga., one killed and three or four injured in wreck. Augusta, Ga., W. V. Bell, injured by fall from car. Rockingham, N. C., collision; H. L. Holland, killed, and two perhaps fatally injured. Alverton, Pa., Thomas Taitson, killed by train. Pittston, Pa., James Tamulis, killed by train. Ambridge, Pa., John W. Athey, killed by train; John Farrell, injured. Carlisle, Pa., six injured in collision. Long Branch, N. J., train struck wagon; James F. Danskin, killed. Washington, N. J., Mrs. Morgan Vliet, injured in runaway. North Tonawanda, N. Y., George Ball, killed by train. Phillipsburg, N. J., Lorenzo Lewis, injured by fall from engine. Fairmount, N. J., unknown man killed by train. Montour Falls, N. Y., three injured in collision. Rensselaer, N. Y., George A. Baldwin, killed by train. Watertown, N. Y., Jesse H. Lemon, killed by train. Niagara Falls, N. Y., three tramps killed by wreck. Hicksville, N. Y., Fire Chief Smith, killed by train. Middletown, N. Y., Alfred Gerow, injured by trolley. Minerva, N. Y., Miss Lizzie Heveron, injured in runaway. Providence, R. I., Henry Downes, injured by trolley. Middletown, Conn., train struck carriage, probably fatally injuring the two occupants. Thomaston, Conn., Philip Martin, injured by jumping from trolley. Stoughton, Mass., Frank Healy (7), injured by wagon. Lynn, Mass., Frank Bellman, injured in train and trolley collision. Norton, Mass., Otis Sweet, injured by cyclist. Cornwall, Ont., Michael Snetsinger, killed by train. Brush, Col., Paul Miller, killed by train. Washington, Ind., George Braun, killed in runaway. Lowell, Ind., Edmond Gale, died from kick of horse. Bellefontaine, O., six-year old, girl injured by kick of horse. Columbus, O., W. W. Mackey, injured by horse; Mrs. W. E. Light, probably fatally injured in runaway. Greensburg, Pa., three injured in runaway. Geneva, N. Y., Arthur J. Hammond, injured by fall from bicycle. Clinton, Ont., William Robinson, killed by train. Seaforth, Ont., M. Williams, seriously injured in runaway. Stratford, Ont., engineer killed in collision. Salt Lake City, Utah, Dorotny Averett (5), killed by trolley. Gillett Mill, Ark., W. F. Waggoman, killed by train. Clarksville, Ark., Roy Jett, killed by train. Hale, Mo., Edward Smalley, killed by train. Willmar, Minn., one killed, one probably fatally injured in collision. Aurora, Ill., Charles Converse, killed by train. Brenham, Tex., four injured by fall from handcar. Morantown, Pa., Walter Wills, perhaps fatally injured by train. Scranton, Pa., Brakeman William Smith, killed in wreck. Summerville, Pa., Reed Robinson, killed by train. Johnsonburg, Pa., Fred Mattison, killed by train. Vineland, N. J., two injured in bicycle collision. Montclair, N. J., Mrs. Mary Parritt, injured by train. Turtle Point, Pa., John Duell, killed by train.

OCTOBER 20.

Jamestown, N. Y., August Peterson, thrown from wagon; shoulder broken.....Grand Rapids, Mich., boy injured by horse.....Milwaukee, Wis., James Flynn, injured by car.....St. Louis, Mo., Misses Julia and Rose Pidgeon, injured in trolley accident.

OCTOBER 20.

Lawrence, Mass., Evans Williams, cyclist, injured by trolley. Brooklyn, N. Y., trolley struck wagon; driver injured. Flint, O., Engineer Ryder fatally injured and seven or eight hurt in wreck. Salamanca, N. Y., train struck carriage; G. C. Clark, injured. Boston, Mass., Chas. J. Donahoe, injured in runaway. Gloucester, Mass., Duncan McLean and H. E. Monro, injured in runaway. Boston, Mass., Daniel McCloud, injured by train. Coal Creek, Tenn., fifteen injured in wreck. Flushing, N. Y., Mrs. Catherine Johann, injured in trolley accident. Chicago, Ill., Mrs. Hattie Mollett, injured by phaeton. Jackson, Mich., Mrs. Parkhouse, injured by being thrown from buggy. Chicago, Ill., train struck wagon; Michael Gethins and Timothy Lynch, killed. Cincinnati, O., trolley struck buggy; Wm. Hanrahan, injured. Cincinnati, O., Wm. Scroggins, injured by fall from buggy. Earl Jones, injured by fall from wagon. Cincinnati, O., nine injured in wreck. Palmyra, Pa., four tramps killed in wreck. Nashua, N. H., John G. Wheeler, injured by fall from train. Gloucester, Mass., two men injured in runaway. Lykens, Pa., wreck; two trainmen killed and two injured. Wilmington, Del., Gladys Pyle, injured by wagon. Terre Haute, Ind., Austin Surratt, killed by train. Doughton, O., George Link, perhaps fatally injured by train. Wilkes Barre, Pa., Frank Curran, killed by train. Allentown, Pa., John Wollock, killed by train. Mauch Chunk, Pa., Chas. Angstead, injured by train. Cranford, N. J., Edward A. Johnson, killed by train. Troy, N. Y., Jos. Yorke (12), injured by trolley. Olean, N. Y., Frank Williams, killed by train. Mansfield, Mass., trolley struck wagon; Chas. Jacobs, hurt. Chester, Pa., Samuel Scott, injured in runaway. Ottawa, Ont., Vernon Murray, cyclist, injured by wagon. Toronto, Ont., Henry E. Jones, killed in runaway. Toronto, Ont., Eva England, knocked down by horse; broken leg. Bowling Green, O., Mrs. S. Ames, injured by train. Reading, Pa., Jacob Horn, killed by train.

OCTOBER 21.

Washington, Pa., Levi McCartney, killed in runaway.....Johnstown, Pa., Moses Glosser, injured in runaway; arm and leg broken.....Fall River, Mass., Albert Karl (4), injured by trolley .....Mohegan, Conn., unknown man killed by trolley.....Uhrichsville, O., man killed by train .....Augusta, Ga., Phil Callahan, injured in runaway.....Perth Amboy, N. J., Chris Larsen, injured in runaway.....Little Falls, N. Y., Frederick Warner, killed by train.....Syracuse, N. Y., J. G. Palmer, struck by train; lost arm.

New York, Arthur Dines, killed by trolley. New York, two horseback riders injured in collision. Elmwood, O., a dozen people injured in collision. Norwood, Mass., Geo. H. Stewart, injured by fall from bicycle. East Bridgewater, Mass., motorman injured in trolley collision. New York, John Barkey, injured by trolley. Quinapoxet, Mass., Peter Glumtz, injured in runaway. Belari, Md., Wm. H. Huff, killed by train. Kansas City, Mo., Lonnie Wimmer, injured by kick of horse. New Bedford, Mass., runaway, injuring Prof. C. P. Brooks and Mrs. Louis E. Snurtleff, the latter probably fatally. Elburn, Ill., Edward J. Howard, killed by train. Fair Haven, Conn., boy killed by team. Saugo, Tenn., Mr. Mack Rudolph, injured in runaway. Southport, Conn., Wm. Sullivano, killed in runaway. Saco, Me., Jerome Kidder, injured by kick of horse. New Florence, Pa., fireman killed, engineer and a few passengers injured in wreck. Cincinnati, O., 13 injured in wreck. Camden, N. J., train struck wagon; driver probably fatally injured. Winona, Minn., Andrew Losinsky, killed by train.

OCTOBER 22.

Braddock, Pa., trolley struck wagon; Thomas Warsel, hurt.....Pittsburg, Pa., girl killed by trolley.....Rochester, N. H., train struck wagon; Driver Cartier, injured.....Albany, N. Y., Joseph McConville, injured in runaway..... Keyser, W. Va., Mrs. Nimrod Alkire, killed in runaway.....Hornellsville, N. Y., Spellman J. Fults, killed by train.....Albany, N. Y., Edward Kerwin (9), injured by bicycle.

Belleville, N. J., Clara Groner (5), injured by trolley. New York, George Feete, injured by fall from bicycle. New York, Charles Langan, injured by wagon. Pittsburg, Pa., Margaret Scott (11), killed by car. Mansfield, O., Dr. Thomas Vickers, injured by wagon. Bolivar, Pa., fireman killed and some passengers injured in wreck. Manchester, N. H., E. A. Stratton, injured in runaway. Methuen, Mass., Miss Louise Locke, injured by fall from carriage. Brooklyn, N. Y., John Carizo (3), killed by truck. Athol, Mass., Jesse Howe (9), injured by wagon. Allentown, Pa., Anthony Costello, seriously injured by train. Philadelphia, Pa., car struck cart; driver seriously injured. Natick, Mass., Stephano Adriato, thrown from wagon; leg broken. Boston, Mass., David Coleman, injured by horse. Lynn, Mass., three men killed by train.

New York, trolley struck ambulance, injuring driver.....New York, Chas. H. Day, killed by van... ..New York, cab collided with carriage; Mrs. J. Galbraith, injured.....Chattanooga, Tenn., collision; fireman killed.....Newark, N. J., John Laure, Jr. (9), run over by wagon; may die.....Newark, N. J., Frederick Kliebold, injured by trolley.....Newark, N. J., Geo. H. Wood, killed in runaway.....New York, Jos. Jenotto (4), injured by car.....Boston, Mass., Miss Jessie Delaney, injured by wagon..... Woodbury, N. J., car struck wagon; David Tweed, injured.....Kent, O., Wm. Warner, killed by engine.....Saratoga, N. Y., Wallace Coles, injured by train.....Greenfield, Mass., Jos. Wallace and James Moriarty, killed by train.....New Britain, Conn., three injured in runaway.....Lancaster, Pa., Samuel Spangler, injured in runaway.

OCTOBER 24.

Boston, Mass., Mrs. M. C. Day, injured by wagon.....New York, Julius Reinbold, injured in runaway.....New York, Mrs. Margaret Walsh, killed by trolley.

OCTOBER 25.

New York, Mrs. Magdalene Schrencause, injured by trolley.

AUTOMOBILES.

OCTOBER 20.

Philadelphia, Pa., Dr. A. W. Sully, struck by automobile; shoulder injured.

OCTOBER 21.

New York, Mrs. Louisa Johnson, injured by automobile; may die.....Indianapolis, Ind., Eugene Brown (7), injured by automobile.

OCTOBER 22.

Mineola, L. I., Foxhall Keene and chaffeur, thrown from automobile by axle breaking; not dangerously hurt.

OCTOBER 23.

Boston, Mass., Chester Kelman (10), struck by motor delivery wagon, but not injured.

OCTOBER 24.

New York, Kate McGowan, struck by automobile; slightly injured.....Allegheny, Pa., J. G. Wright, seriously injured by being thrown from automobile.

May Accept New Company's Bonds.

Press dispatches from Middletown, Conn., state that many holders of the bonds of the Keating Wheel & Automobile Co., which has been taken over by the Eisenhuth Horseless Vehicle Co., refused interest checks as acceptance. This would indicate willingness to accept any bonds that the new company might issue in substitution. Local bondholders will not for the present surrender the old Keating bonds.

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Recent Incorporations.

Jersey City, N. J.—Daimler Manufacturing Company, with $600,000 capital, to manufacture motors, engines, etc. Incorporators: Otto G. Nestle, J. Henry Mitchell and Alvoni R. Allen.

Cleveland, O.—Star Automobile Company, with $50,000 capital, to make gasolene automobiles. The incorporators are J. H. Vandorn, E. I. Leighton, W. A. Dutton and Frank Schneider.

Augusta, Me.—The American Automobile Company, with $500,000 capital, to manufacture automobiles and mechanical vehicles. The officers are: President, F. I. Dutton; treasurer, E. F. Whittum.

Niagara Falls, N. Y.—Niagara Traction Automobile Company, with $25,000 capital. Directors: W. R. Campbell and F. A. Dudley, Niagara Falls, and F. A. Babcock, Buffalo.

Kittery, Me.—Boulton Automobile Company, with $500,000 capital, to manufacture and deal in automobiles. President, Horace Mitchell; treasurer, John M. Heath.

Bristol, Conn.—The Bristol Motor Car Company, with $10,000 capital, to develop, patent and sell inventions connected with the manufacture and sale of motor vehicles. Incorporators: F. N. Manross, E. R. Burwell and W. L. Newbaur of Bristol, and J. H. Jones and A. A. Geisel of Springfield.

Brooklyn, N. Y.—The Kings County Automobile Club, to "promote the mutual enjoyment of the members in the pursuit of automobiling as a pastime." The directors for the first year are as follows: George A. Needham, Thomas H. Ivery, Charles L. Simms, H. W. Robins and Alexander S. Farmer, of Brooklyn.

No Wind Too Strong for it.

In order to cope with that bete noir of some steam car users, "back firing," the Standard Supply Co., Philadelphia, has brought out what it terms a vacuum smoke cap. It consists of a small glass tube, attached to which are two ingeniously fashioned caps made of tin. It is claimed that with this device, no matter in which direction the wind may blow or how strong, the draft is greatly increased, and the stronger the wind pressure the better the draft; in short, with this device "back firing" is rendered absolutely impossible.

Grout Steam Carriages

THREE GROUTS WIN
BLUE RIBBONS.

We also received President's Cup.

GROUT BROS.

ORANGE, MASS.

The New York-Boston-New York Reliability Contest proved that we always win and you never lose.

When a tire goes down you want wheels which will stand up—

They are **Weston-Mott** every time.

We give you the choice of two kinds and you get one result.

The choice we give:
WOOD OR WIRE WHEELS
(and they are interchangeable).

The result you get:
SATISFACTION
(and that's everything).

Steering Axles.

STEEL RIMS
of every section and every size.

WESTON-MOTT COMPANY, - - Utica, New York.

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The H. H. Franklin Co., Syracuse, N. Y., expect to have their new factory ready for occupancy by January 1.

It has been decided to hold the annual banquet of the Automobile Club of America on January 24 at the Waldorf-Astoria.

As a result of the application, the case has been set for hearing in the United States Circuit Court of Appeals in Philadelphia.

The Bates-Odenbrett Automobile Company, Milwaukee, Wis., has been organized and opened a store at 501 Broadway. The Winton and other cars will be handled.

An automobile, said to be valued at $10,000, belonging to H. Holsman, was stolen in Chicago on Monday. The thief stepped into the car, threw the clutch in and rode off.

The Diamond Automobile Co., Wilmington, Del., is in the hands of the sheriff. The concern was recently incorporated with a capital of $100,000, but very little work had been done.

Acting upon complaints that have been made regarding undue speeding of automobiles, the Utica (N. Y.) police have announced that they will hereafter arrest any violators of the State law.

About a dozen cars filled with members of the Automobile Club of Maryland were driven from Baltimore to Frederick, Md., and return, 4 miles each way, last week. They had a most enjoyable trip.

It is claimed that a Panhard car was last week driven from Great Neck, Long Island, to Philadelphia and return, 268 miles, by its owner, George Arents, jr., in 11 hours actual running time.

Automobilists, as such have found their way into politics. Last week the New York Electric Vehicle Association, composed principally of operators of cabs in this city, indorsed one of the judicial candidates.

After covering 5,125 miles in his Napier car, Charles J. Glidden has reached his home at Lowell, Mass. With a party of friends Mr. Glidden toured in France, Belgium, Germany, Austria, Italy, Switzerland and England.

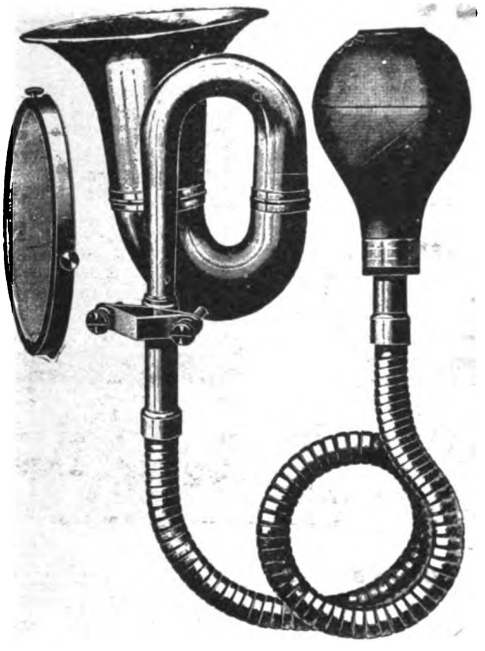
Attention has been attracted in Peru by the arrival of two automobiles, one burning coal and the other petroleum, at Cerro Pasco from Tambro, Col. They covered 100 kilometres in 36 hours, and carried 10 tons of cargo.

A test of the patrol wagon which the Electric Vehicle Company built for the Atlantic City, N. J., police department, was made last week. The wagon developed a speed of 14 miles an hour and was also satisfactory in other respects.

"The Blue Assassin" is the grewsome name that an imaginative Hartford (Conn.) reporter has given to the new Apperson car purchased by George M. Brown, of that city.

Latest French Horn.

The latest style in French horns is shown in the accompanying illustration of Miller's No. 4, which is being imported by Charles E. Miller, 97 to 101 Reade street, this city. This horn is fitted with forty inches of exible metallic tubing, with one bracket for attaching to the front of the car and another bracket for attaching bulb to steering lever. It also has a sieve or screen over the bell. This horn is one of 28 other sizes, all of which are carried in quantities to insure prompt shipments.



Mr. Miller is a large importer of everything in automobile sundries and novelties, and has a representative in France that his goods may always be up to the minute in design, price and deliveries.

It takes its name from "its powerful appearance and royal blue coloring," it is added.

In a resolution passed by the board of governors of the Automobile Club of America on Monday the Knox Automobile Co., the . Stevens Arms & Tool Co., and the Massachusetts Automobile Club were thanked for the courtesies extended the participants in the recent reliability contest.

The recently organized International Wheel, Tire & Rubber Mfg. Co., New Brunswick, N. ., has purchased the old factory of the New Brunswick Rubber Co. and expects to begin to operate it within a very short time. The company will manufacture automobile and carriage tires on which it holds patents.

It is stated that 36 motor vehicles were used by the two army corps during the recent German manœuvres. Twenty of the vehicles were for the transport of officers and intelligence service, and 10 were transport trolleys, besides several Thorneycroft trucks and Fowler road engines, which did excellent service.

So successful has the experiment of adapting a motor to an ordinary London fire engine proved that it has been decided to convert several other engines into automobiles. In these cases, as in the one recently experimented upon, the motor will be located in the centre of the vehicle, beneath the seats of the firemen.

A speedy convalescence is the pleasant prospect held out to A. C. Bostwick, whose serious illness, caused by operations rendered necessary by abscesses forming in his nose, was chronicled in these columns last week. Mr. Bostwick is still confined to the private hospital where the operations were performed, however.

The Albany (N. Y.) Automobile Club held its annual meeting last week, and the reports submitted showed it to be in a flourishing condition. The following officers were elected: President, William E. Milbank; vice-president, Grant Newcomb; secretary-treasurer, Charles M. Page; board of governors, Oliver A. Quayle, Joseph B. Taylor and F. G. Robinson.

Laying aside for the nonce their devotion to the horse, Frank Work and a party of equally "horsey" friends took their first automobile ride last week. The host was John A. Drake, who drove his new Panhard, and his guests were, in addition to Mr. Work, David Bonner, E. R. Ladow, president of the Leather Trust, and Hamilton Busby, of Turf, Field and Farm.

At the annual meeting of the Wachusett Automobile Club of Fitchburg, Mass., held last week, the following officers were elected: President, Charles F. Putnam; vice-president, A. H. Pierce, of Leominster; secretary, Levi H. Greenwood, of Gardner; treasurer, G. P. Grant, Jr.; auditor, F. O. Hardy.

The committees were continued as made at the time of organization.

The Congress of the Automobile Federation of the Southeast of France for 1902 will be held at Marseilles toward the middle of November next. The congress held at Nice in October, 1901, had fixed the date for the early days of October, but with common accord, and to give the necessary time to the secretary to convoke the clubs and to prepare the agenda, the date was delayed until November.

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BURNS CRUDE PETROLEUM

Marked Success Attends Tests of Hydroleum System—Cost Enormously Reduced.

"To say that anything will revolutionize a trade' nowadays is to stamp it with suspicion. The term has come to be a byword for harebrained inventions. Yet we are tempted to use it as a fair description of what the introduction of the 'Hydroleum' system may mean to the steam car," says the Motor Car World.

"The application of the hydroleum system to motor cars has solved, it is claimed, the problem of effectually and economically burning crude liquid fuel. The feeder has two inlets—that furthest from the nozzle being for the oil supply, and the other being connected with the boiler for the supply of steam. The oil is discharged from the centre of the nozzle, at atmospheric pressure, the supply being regulated by placing the reservoir slightly lower than the outlet nozzle, so that a proper quantity is drawn at any speed. A needle valve also regulates the supply of oil. The reservoir is really a float chamber, to which there is a gravity feed from the oil tank. From this chamber the oil is drawn into the feeder by the suction caused by a vacuum produced by the issuing steam.

"Surrounding the oil outlet, but at the base of the cone, and therefore behind the oil supply, is an aperture from which the steam emerges. Together, oil and steam are directed to a dash-brick, of special size and location, between an enveloping passage of refractory material, proportionate in size to the dimensions of the feeder employed. The whole of the vapor is thus kept together until it fires on the dash-brick, and this concentration of the vapors, with the small area of the brick, allows the latter to rapidly become sufficiently heated to decompose the vapor into its component gases; these, after leaving the brick, reunite and give out heat in the main combustion chamber

"The steam generator, which is of the water tube type, gives increased heating surface and compactness, coupled with a decrease in weight, but the principal point in the boiler, from a quick steaming point of view, is that the heat is made to run parallel with the tubes, instead of across them. This is accomplished by inclosing the tubes in a flue of refractory material, running from the feeder to the point of exit.

"The engine is simple, of the single cylinder type, but it can be worked high pressure or compound, if required, say, for starting or whenever considerable power is required for short periods.

"It is in the economy of fuel, and the use of the cheapest fuel, however, that the hydroleum system will most appeal to the motor car public. The crudest and cheapest oils obtainable are sufficiently good, and on this point and some others connected with the actual working G. H. Green, who has been installed as manager of the company, says:

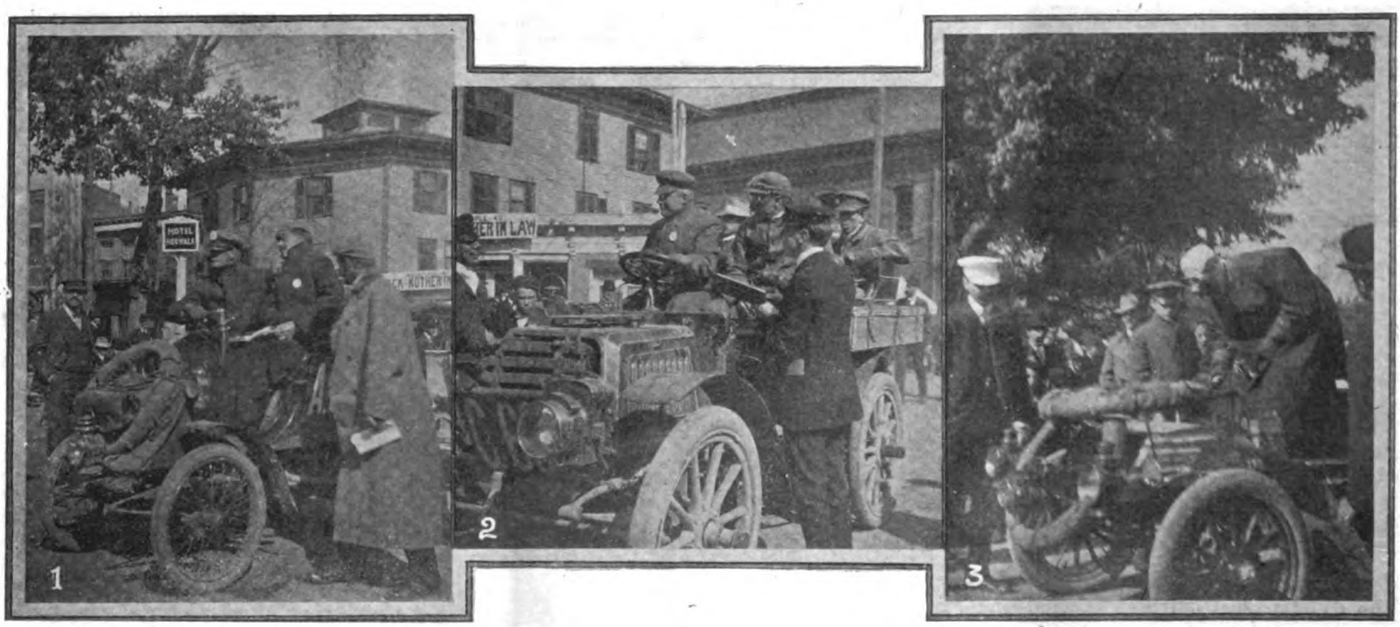
" 'The cost of driving a steam car at present may be set down at from 3 to 4 cents a mile. We shall reduce that to not more than a quarter of a cent. The oil used is a crude mineral oil, which we propose to supply in quantities at 4 cents a gallon. We find in practice with a 6½ horsepower motor carrying four passengers that the average quantity required is under two gallons for 30 miles. This, at one cent a gallon, means a cent a mile. For customers' convenience we also propose to put this oil up in convenient tins for carriage by rail and on the car. There are absolutely no obstacles to the use of this oil from an inflammable point of view. No license is needed to keep it, for, as crude mineral oil, it does not come under the regulations. It is perfectly non-explosive, and, commercially speaking, it not burnable, if I may coin a word.

" 'We propose to make the fitting of existing cars our first business, and are preparing ourselves for this work. The alterations we make are to do away with the existing burners, fix our own feeder and a combustion chamber, alter the present gasolene tanks, placing our own oil tank high enough to allow a gravity feed to the float chamber which we supply, and which is placed below the feeder. The cost of conversion of a car depends on the horsepower, but a 5½ horsepower car, for instance, would cost about $150 to convert.

" 'We shall supply complete sets for building with the car, but for the first few months, at any rate, we anticipate that the bulk of our work will lie in conversions.'

"The noise of the burner is slight and scarcely distinguishable, in easy running; opened for a long hill the noise becomes more pronounced, but is still less than that of a gasolene car and unobjectionable. The time taken to light up is practically nil if the boiler is already under steam, but if cold it takes from four to twenty minutes, according to the type and size of boiler.

"Experiments with boilers have given working pressure within a quarter of an hour. The feeder is lit by the application of a 'torch,' i. e., a small wad of asbestos, waste or the like, dipped in a little paraffin. Once the apparatus is properly adjusted there is neither smoke nor smell; adjustment is easily done, and once done it does not require to be touched again for a long period. Experiments and steady use have shown that there is no difficulty in increasing the



READY FOR A JOURNEY. L. D. FISKE (AT THE WHEEL) OF HARTFORD PREPARED FOR TIRE TROUBLES.

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pressure of steam or the rate at which the steam is generated.

"In fact, the arrangement is such that the system is automatic—when the maximum boiler pressure is reached the feeder is automatically cut out. As pressure increases the feeder is more and more put on. The fundamental rule is that the more steam supply the more oil is sucked."

Buys English Storage Battery Company.

An important deal has just been made, whereby the Electric Storage Battery Company, Philadelphia, acquires the effects of a concern doing a similar business in England. Confirmation of the matter is furnished by C. H. Reed, registrar of the company, in the following statement:

"Soon after the incorporation of the Electric Storage Battery Company in Philadelphia a company was formed in England, under the name of the Chloride Electrical Storage Syndicate, Limited. The company only recently reached a dividend paying basis.

"That a vast amount of electrical work is to be done in Great Britain in the next few years is shown by the very large works put up by the British Westinghouse Companpy and the British Thomson-Houston Company, in Manchester and Rugby.

"The Electric Storage Battery Company, seeing the opportunity for a large and profitable business, not only in England, but in other countries, where the low price of labor and material existing in Europe makes it impossible to compete with storage batteries manufactured in America, decided to purchase control of the English company. This has been done on a satisfactory basis, so that the Electric Storage Battery Company will now realize large profits from the English business, and will also be able to sell batteries in foreign countries and have shipments made from England, and thus be in the very strongest possible position to handle the bulk of the business of the world."

THE STRENUOUS LIFE

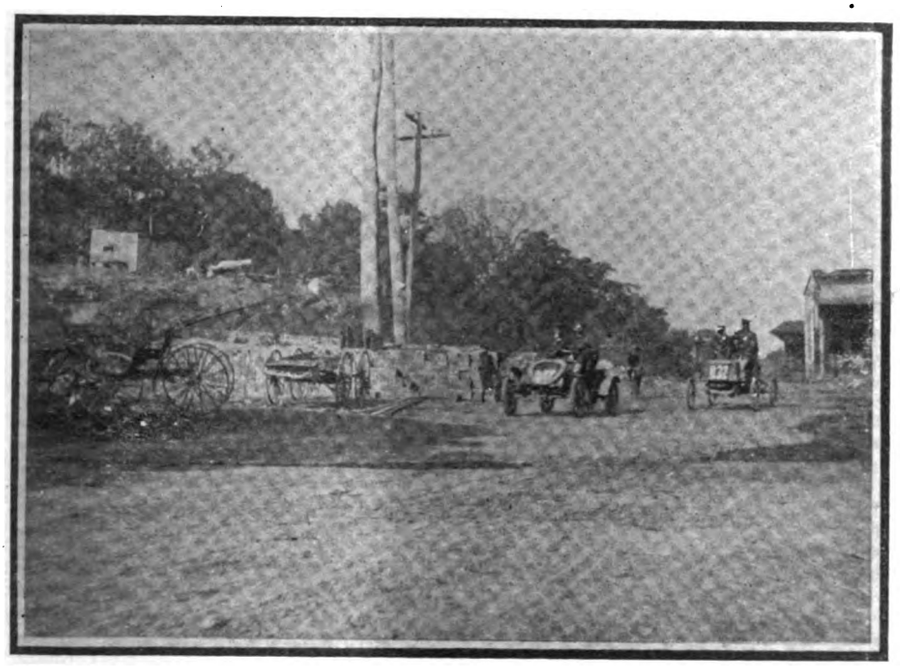
Is the Cause of the Prevailing Mortality—Price Paid for Progess.

"Statistics quoted in the Insurance Press indicate a very great increase of deaths by accident, amounting last year to nearly 9 per cent of all the deaths in this country, or more than twice as large a proportion as deaths from old age, and in the way of disease only excelled by deaths from tuberculosis, pneumonia and 'heart failure'—the last a vague term, which often signifies nothing of cause," remarks the Pittsburg Post.

"It is an increase to be expected with the constantly growing complexity of civilization, multiplying dangers, the constant drift of population to the cities, where causes of accident most abound, and in a measure also to the larger invasion of the country regions with the instruments of danger, such as electric wires, trolleys and automobiles. There is no doubt of the great increase of accidents, and especially fatal accidents. It is one of the prices we are paying for our progress, and the prevalence of the hustle line of life.

"We do not believe there is a city in the country where accidents occasioned primarily by the stress of industrial life are more numerous than in Pittsburg, and in greater excess, considering the proportion of population. In the first place the pressure of life, in industry and business, is as great, if not greater, in Pittsburg than elsewhere, and in the next, the avocations pursued in our industries are what are known as extra hazardous, especially when under high pressure. It extends beyond the field of industries, these fatalities. The great increase of suicides has been noticed by all observers the last few years. Then even homicides have their relation to the rush of business and the overtaxing the balance wheels that guard human life. The terror at Homestead is an illustration, and the increase of homicidal crime carries its lesson.

"We are living in the seething and boiling period of human endeavor and individual competition, and the penalty is exacted. Human life, with all our progress, is not so well protected. Enterprise has stimulated recklessness. Human life is cheaper than ever before, save in periods of great wars."



WHERE HORSES, AUTOMOBILES AND BICYCLES MINGLED.

One Delusion Dispelled.

"There is one point I think that this run has demonstrated, and that is the care and consideration of the highway by the contestants," Chairman Scarritt of the reliability contest committee is quoted as saying. "Sixty-eight cars made the trip over the most frequented roads from here to Boston, and started but one runaway, and this was not our fault. The driver confessed that his reins were old and not strong enough to hold his horse, and that they broke at his first pull.

"It was impossible for this train to go through so thickly a populated community without damage unless great care had been exercised. The trip shows what can be done, and it will be urged as an example of the care used by our drivers when the matter of legislation is taken up by the national association. This association expects to have radical and uniform legislation passed in the different States to enable drivers to run from one to another under uniform rules.

"As it is now, when a driver wishes to go from Cleveland to Boston, for instance (as has been frequently done), he has one rule to observe in Ohio, another in New York and still others in Connecticut and Massachusetts. He must familiarize himself with the statutes of the different States and provide no end of signals and numbers for his journey. We think it only fair for the automobilists, as well as for all other users of the highway, to have uniform rules for all States, and this we hope to bring about.

"The care with which this run was made will be an argument, I think, in favor of legislation for the automobilist."

Praise for the Mecaniciens.

The suggestion is made that the mécanicien of a motor car should receive some recognition for his services. A correspondent of the Auto Velo puts it this way:

"You glorify the drivers. Nobody grudges them this. It is their due. But they alone are mentioned and praised. Why don't you give similar credit to the mecanicien who adjusts and trains the motor to racing condition and victory; the man who trusts his life in blind confidence on the racing day to the driver of the car?

The Bristol Motor Car Co., Bristol, Conn., will at once begin work on its first vehicle, and it is expected that it will be ready by January 1.

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TREATED WITH OIL

Section of English Road is Subjected to Exhaustive and Successful Experiments.

Remarkable success has attended the systematic treatment with oil on an English road. A division of the road into three sections was made, on each of which the oil was sprinkled in varying quantities. One section received several heavy "coats," another was sprinkled very lightly, while on the third the roadway was first swept and watered and then well sprinkled.

Ordinary watering carts were used for distributing the oil, but as the sprinkling was somewhat irregular the use of ordinary watering cans were requisitioned to cover neglected spots.

The "oiling" occupied a part of each day on September 26 and 27 last, and the result of the experiment, so far as could be ascertained in the short period extending to Saturday last, is highly satisfactory.

Two cars were sent over the ground at very rapid speed without raising the slightest speck of dust, but immediately on reaching the ordinary road surface they were enveloped in a white cloud which completely hid them from view.

The test was exceptionally severe, from the fact that the macadam surface is laid on the Bagshot sand, which makes a very weak foundation. The road is the most dusty in the country, partly owing to the sand working through the macadam, and partly to the heavy traffic, this being the main road to Winchester and Southampton.

The surface is composed of well rolled in Cherbourg quartzite, and the particular section now under the oil "treatment" was repaired last year at a cost of £800.

A careful record is being kept of the cost of the labor, of scavenging and keeping in repair the oiled section, and a piece of the ordinary roadway of equal length adjoining, so that a comparison may be made of the relative cost of oil and water.

The oiling cost, roughly, about $125 per 1,000 yards, and altogether 2,760 gallons of petroleum of a specific gravity of .92 per cent were used.

The oil—which measures 240 gallons to the ton—cost about $9 a ton at the wharfside in London, but its entire cost, delivered at Farnborough, was probably nearer $12.50 a ton.

The oil quickly soaked into the road and left a well knit and firm surface. Even shortly after laying it was not in the least sticky, and in a few hours the smell, which many persons thought would be an effectual barrier to its use for this purpose, wore completely off—no trace of it was discovered by Saturday's visitors.

Contrary to expectation, the traffic had not to be shut off during the sprinkling, and no harm was occasioned, or is likely to be, to the dress of any passersby.

The seven days' trial of the oil has demonstrated several facts, of which the following are the most interesting:

1. That three-quarters of a mile of road surface 23 feet wide requires 11 tons 10 hundredweight, or about 2,760 gallons, of petroleum to properly oil it.

2. That a surface that has been swept beforehand gives the best results.

3. That better distributing apparatus will have to be used, the water carts being too uneven in their action. A spraying machine that will throw with force and evenness will probably be introduced.

4. That the slight smell while the oil is being applied is not unpleasant, and passes away in a few hours.

5. That so quickly is the oil absorbed by the surface of the road that pneumatic tired vehicles can pass over it within a few hours of its being sprinkled without sustaining any damage whatever.

6. That the oil makes the roadway almost a silent highway, the noise of vehicular traffic being deadened to a remarkable extent.

7. That the pleasant brown color produced by the oil is far less trying to the eyes than the white glare of the ordinary dusty surface.

As to the fear of the motorist that his tires may be injured by contact with the oiled surface of the road, it is interesting to note that the oil used for road sprinkling is residual oil, i. e., that which is left after the distillation of the lighter oils has taken place, and is absolutely harmless to india rubber tires, as it is only the lighter oils which injure rubber, acting, as they do, as a solvent.

The sweepings are to be weighed and measured, so as to compare them with those of the non-oil treated section.

One thing that has caused surprise has been the immense quantity of horse droppings, which show rather distinctly on the road surface, and are an eloquent testimony to the superiority of the motor over the horse from a sanitary point of view.

Foot passengers have been so much impressed with the linoleumlike surface of the road that they are anxious to have the gravel footpaths oiled, and this may form the subject of another experiment.

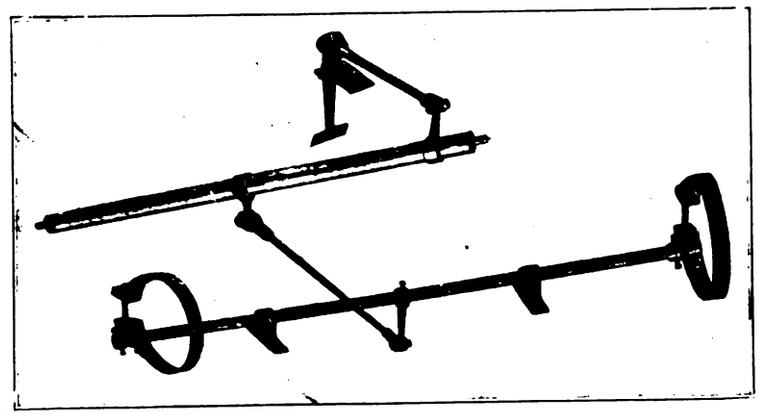
There is no danger of side slipping on the oiled surface, and mud is as scarce in wet weather as dust in dry, for the reason that the rain runs off into the gutter like water off a duck's back.

Not Fined for Loafing.

Whatever John W. Gates, the Chicago steel magnate, does, he does with his whole heart. Consequently it is not surprising that reports of his exceedingly strenuous automobiling trips should have shown that he has on more than one occasion run afoul of the authorities.

On his return from abroad last week Mr. Gates thus unburdened himself to reporters:

"I went away for a rest and got it. I did a lot of automobiling, and I bought a 45 horsepower Mercedes, which I am bringing over with me."



BAND BRAKE ATTACHMENTS.

"Is your new auto a fast one, Mr. Gates?"

"You didn't read anywhere that they fined me for loafing, did you?" he replied.

Mr. Gates also purchased two automobiles which he intends to use next year, and the machines are now on their way over.

Band Brake Attachments.

For use in connection with their artillery pattern wood wheels the Neustadt-Perry Co., St. Louis, Mo., have just gotten out driving sprockets and castings for double acting band brakes fitted on the wheels. The attachment is made to accommodate a sleeve in connection with the rear axle, as shown. The double acting band brake attachments are made on the eccentric principle, together with levers and all necessary attachments for operation in connection with the wheels.

Cheap at the Price.

Twelve hundred hares were killed to produce a coat made entirely of hares' ears shown by a London furrier. It took three months to manufacture, one man being employed three days in cutting the ears from the skins. It has been specially treated to render it waterproof.

Considering the immense amount of labor spent on it, it seems cheap at the price, $100, which is asked for it.

A speed and endurance test, to take place next month, is talked of by members of the Hudson County, N. J., Automobile Club.

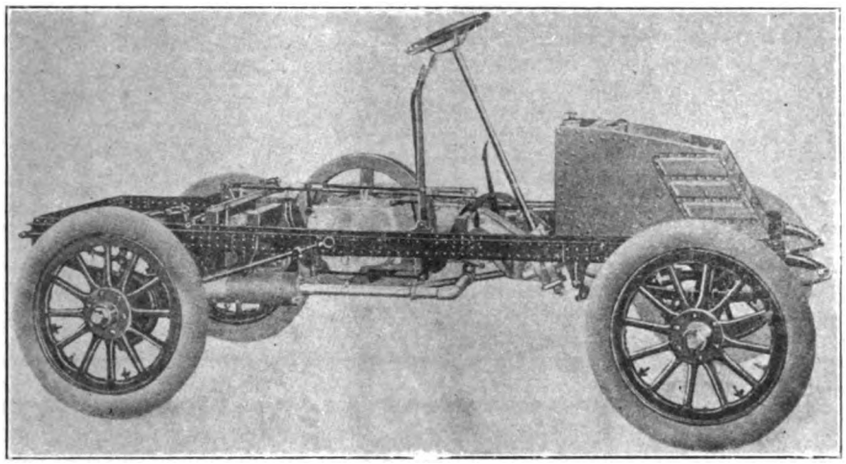
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Winton's New Features.

When the present Winton touring car made its appearance a year ago it is quite within bounds to say that it created a sensation. It was such a radical departure from former Winton designs, and withal such a distinct advance, that it was hailed with acclaim by friends and examined with respect by competitors. The subsequent career of the car, its instant and tremendous success, is now history.

The 1903 Winton touring car, the chassis of which is shown, is a worthy successor to its predecessor.

It follows the lines of this year's car as a whole, but it has been vastly improved in a dozen different ways. Instead of 15 horsepower, the motor will generate 30. It is of the double opposed type, with an actual increase of 33 per cent brake test horsepower over the 1902 type. The numerous improvements along general structural lines will insure greater efficiency and simplicity throughout.



ASSEMBLED RUNNING GEAR OF THE 1903 WINTON.

The new body in design, materials and workmanship will represent a radical departure from the 1902 type. It will be luxurious to a degree. There will be a division in the wide front seat and the tonneau will comfortably seat three passengers. No expense or skilful effort has been spared in the matter of designing and executing the finest body ever made part of an automobile equipment. The chief aim has been to insure greatest comfort to passengers who occupy either the front or tonneau seats, and it is believed that the efforts in this direction have been entirely successful. Deep spring upholstery will mark one important change. In this connection the seats and backs will be alike.

The spring suspension of the new touring car is another point which must not escape mention. Springs will be much longer, wider and more elastic, made from a special spring stock, and it is believed that there is no longer a possibility of spring breakages even though the service be severe.

The price of the new car complete will be $2,500, and in the matter of real value it will be a better "buy" than the 1902 model at $2,000. In the matter of body construction alone this increase over the price of the 1902 touring car is more than accounted for, to say nothing of the elaborate and expensive improvements made upon motor and running gear throughout.

Exclusively for Automobilists.

No golfers or tennis players will be invited to join the Buffalo Automobile Club. That was decided at the annual meeting of the club, held last week at the Niagara Hotel.

The question came up before the club during the consideration of the advisability of building a clubhouse. George S. Metcalfe submitted a report from the committee on house and grounds which took up the question of purchasing a site and clubhouse, and suggested the name of the club be changed to the "Automobile and Outing Club." His idea was to increase its members by taking in golf and tennis players. He thought the club would then be in a better position to maintain a clubhouse.

The suggestion raised a storm of disapproval. Edward H. Butler and Dr. T. J. Martin both arguing that Buffalo was large enough to maintain a club exclusively devoted to automobiling.

Officers elected by the club for the ensuing year were: Ellicott Evans, president; H. A. Meldrum, vice-president; John M. Satterfield, secretary; E. R. Thomas, treasurer, and George Metcalfe, member of the board of governors.

Give Clutches Attention.

Clutches do not always receive the attention they deserve. They are allowed to become oily, so that they slip unduly, or the spring holding the clutch to its work is left unadjusted so long that a lot of power is wasted and speed lost. Whenever the engine seems to be going at a good speed and the car going slowly for the gear in operation, it may be assumed that loss is taking place, and that the clutch wants attention. It will generally be found that the clutch is quite hot—perhaps unbearably hot—to the touch.

Melts at 180 Degrees.

The Jos. Dixon Crucible Co. has been at some pains to ascertain the best form of a graphite suitable for the chains of motor cars. At first it was thought to provide a pan containing a hard graphite lubricant, the idea being to put the pan on a stove and when the lubricant had melted sufficiently to immerse the chain, which had previously been cleaned.

After the lubricant in its heated condition had thoroughly penetrated all the bearing points, the chain was to be removed, wiped comparatively dry, the pan removed from the stove and on cooling the lubricant would harden to its original condition. On looking around for information relative to the proper size for such a pan the company found that chains vary so greatly that they would be obliged to have large pans ranging from 12 inches to 2 feet in diameter. This idea was therefore abandoned, and they have now brought out a chain lubricant in pails.

The lubricant is not quite so hard as they desired to have it, but the idea now is that the owner of the motor car shall obtain a pan of the required size, put as much of the lubricant in it as he desires, melt it and then follow the methods outlined above. The reason given by the company for adopting a hard lubricant is that as it cools on the bearings of the chain it makes a better bushing than anything soft could possibly make; also one not liable to so readily retain dust and dirt. They are therefore putting up the lubricant in a cake which will melt at about 180 degrees Fahr.

Discrimination Against Autombiles.

A plea for better treatment of automobilists is made by Leopold de Rothschild. "I venture," he says, "as an old roadster to ask for that consideration toward motor drivers which is called in common parlance the courtesy of the road.

"There is a camraderie among all coachmen, which enables the vehicle to thread its way through the intricacies of a crowded street. At the present moment the motor car is somehow or other looked upon as the common enemy by coachmen, cyclists and pedestrians alike. I cannot help thinking that it would be a great mistake to allow this feeling of irritation to increase, because motors have come to stay, and they are not merely rich men's toys.

"There is no doubt that the large cars, from 12 to 40 horsepower, are only available for those possessing large means, but the smaller cars are of the very greatest service to country professional men whose business takes them 20 or 30 miles round their homes. As an industry, already the building of motor cars means the employment of many men, and as the sales of English made cars are daily increasing, more hands will be wanted at the factories. More men will also be wanted as chauffeurs, and they must be men possessing some knowledge of engineering."

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Need not Pay Toll.

There is now a good prospect of automobiles being able to reach the Manhattan Beach Hotel without having to pay a toll of 25 cents for tooling over the short strip of road leading to Emmons avenue, Sheepshead Bay, to the hotel. Comptroller Grout of New York decided on Monday that the Manhattan Beach Land and Improvement Company has no right to exact a toll and directed the Corporation Counsel to begin proceedings to enforce the rights of the city. The decision of Comptrolled Grout was based, he said, upon the Manhattan Beach Company having appropriated 285 acres of land belonging to the town of Gravesend and the alleged private road on which the toll was charged is built across this land.

The fight to abolish the toll was begun last August by Borough President Swanstrom of Brooklyn, who was held up while going to the hotel in an automobile and made to pay a quarter. President Swanstrom expressed the sentiments of many others when he promptly characterized the mulcting process as "a petty imposition" and declared that he would put a stop to it.

Supports six Miles Ordinance.

Director Leslie, of Pittsburg, Pa., has some peculiar ideas. In supporting an ordinance which he was instrumental in having drawn, and which provides for maximum speeds of six and ten miles an hour for automobiles, he said that it might not be necessary to rigidly enforce the minimum on some of the East End thoroughfares, but he wanted the law broad enough to uphold the police when they found it necessary to make arrests.

The ordinance which limits the speed of automobiles to six miles an hour downtown and ten miles in all other parts of the city was recommended affirmatively to Councils by the committee on public safety. Councilman Lamb wanted to have the limit raised to 20 miles on the boulevards, but his amendment was lost.

America of America.

A souvenir of its European trip is a small sign which is still attached to the rear of the Winton touring car owned by Harry D. Corey, of Boston.

"When we got to Belgium we found that it was necessary to have the car marked as coming from this country," said Harry A. Fosdick to the Motor World man in explanation. "So the Belgian Automobile Club, to whom we carried letters from the Automobile Club of America, undertook to fix us up. This was the result," and he pointed to the sign, which read:



"They thought this was all right, so out of politeness we let them continue to think so."

New De Dion Car From Paris.

A small car is being prepared by De Dion-Bouton for next season's trade. It is a 6 h.p. voiturette, with the engine placed in front under a bonnet, and, broadly speaking, the machine may be described as a reduction of the well-known 8-9 h.p. De Dion. It provides comfortable seating for two, and no provision is made for the attachment of a dickey or a stumpy tonneau, as is sometimes the case with these small cars, the idea seeming to be to produce a thoroughly comfortable, speedy and handy sociable.

Two positive speeds are given, the lower being nine and a half miles per hour, and the second much above ordinary requirements. The total weight is just under seven hundredweight. The springing is exceptionally easy, the rear axle being carried further back than usual, and it has half elliptical springs connected to the tubular frame by means of inverted C springs. The front axle is also thrown well forward, and altogether the little vehicle looks as though it would meet the requirements of a large number of people.

The Week's Exports.

Havre—6 cases motor vehicle parts, $6,102.
London—21 cases auto vehicles, $20,067.
Liverpool—2 cases auto vehicles, $1,800.
Mexico—6 cases auto vehicles, $1,950.
Southampton—2 cases auto vehicles, $2,100.



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We think this pretty strong assurance that we know how to make them well and sell them rightly In the matter of automobile bells we believe the

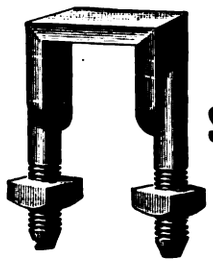
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to be distinctly better than anything else of the sort on the market. It will afford us pleasure to forward you details and price on request.

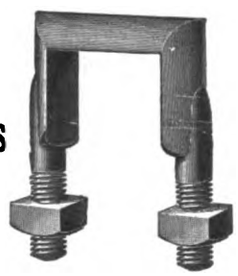
Our goods will be represented by Chas. E. Miller, spaces 46, 47 48, 49, 50, 51 at the Automobile Show, Madison Sq. Garden, New York, Jan. 17, next.

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The Week's Patents.

711,481. Storage Battery Plate. Nathan T. Daboll, New London, Conn. Filed Feb. 19, 1902. Serial No. 94,735. (No model.)

Claim—1. A storage battery plate consisting of wire gauze coated with finely divided carbon, and this in turn covered with white lead.

2. A storage battery plate consisting of a mattresslike case of wire gauze stuffed with finely shredded metal and coated with finely divided carbon, covered on the outside with white lead.

711,520. Electric Motor for Vehicles. Harry G. Osburn, Hoboken, N. J. Filed May 6, 1901. Renewed March 17, 1902. Serial No. 98,455. (No model.)

Claim—1. In an electric vehicle, the combination with an axle, of a wheel journalled thereon and having a laterally extending hub, the stationary element of an electric motor carried upon the frame of the vehicle and the rotatable element of the motor supported on the hub of said wheel and secured to the outer portion thereof, substantially as described.

711,546. Water Tube Boiler. John E. Thornycroft, Chiswick, England. Filed June 18, 1901. Serial No. 64,983. (No model.)

Claim—1. In a steam boiler, the combination with a steam and water vessel, of a plurality of steam generating elements each comprising two sets of groups of tubes inclined to one another and a junction box common to both sets or groups of tubes and connected to the converging ends thereof, and means connecting the diverging ends of the tubes of each element to said steam and water vessel.

711,592. Running Gear for Vehicles. Frank Schmitz, Chicago, Ill. Filed March 5, 1902. Serial No. 96,740. (No model.)

Claim—1. In a running gear, the combination with a rigid quadrangular frame, of four wheels connected thereto substantially at the corners of said frame, and separate springs adapted to exert independent downward thrust on the several wheels with respect to said frame; substantially as described.

711,606. Steam Engine. Paul H. White, Indianapolis, Ind., assignor to White Steam Wagon Company, Indianapolis, Ind., a corporation of Indiana. Filed Oct. 3, 1901. Serial No. 77,376. (No model.)

Claim—1. In an engine, the combination of a boxlike body, a crank shaft extending therethrough, a pair of high pressure cylinders, a pair of low pressure cylinders, two of said cylinders being arranged upon each side of the crank shaft and secured to said body, pistons mounted in said cylinders, connections between said pistons and crank shaft, valves for controlling the passage of the motive fluid to and from said cylinders, valve gear mounted inside of the body and connected to said valves, and means for closing said body so as to inclose the working parts of the engine.

711,652. Sparking Mechanism for Gas Engines. Ernest S. Bowen, Auburn, N. Y., assignor of one-half to Walter L. Fay, Auburn, N. Y. Filed July 5, 1901. Serial No. 67,108. (No model.)

Claim—1. In a gas engine sparking mechanism, the combination with the terminals suitably supported and suitable electric connections thereto, of a speed controlling lever suitably journalled, an igniter cam journalled on the speed controlling lever, means to rotate the cam and intermediate connections between the cam and the terminals to force their separation and thereby cause the spark.

711,675. Vehicle Construction. Edward H. Phipps, New York, N. Y., assignor to Phipps Road Car Company, a corporation of New Jersey. Filed Feb. 8, 1902. Serial No. 93,264. (No model.)

Claim—1. As an improved article of manufacture, a vehicle axle comprising similar end sections having reduced meeting portions which slide one on the other, a sleeve inclosing the said overlapping sections, and a bolt connecting the sleeve and the overlapping axle parts.

711,710. Storage Battery. Daniel E. Wiseman, Chicago, Ill., assignor of two-thirds to W. W. Vance, Ottumwa, Iowa, and Charles V. Aspinwall, Chicago, Ill. Filed March 12, 1901. Serial No. 50,884. (No model.)

Claim—1. A storage or secondary battery consisting of two electrodes immersed in a suitable electrolyte and inclosed in a suitable cell, said electrodes being supported upon rods fixed in the cell, said electrodes being composd of a conducting strip or ribbon being bent back and forth upon itself in serpentine form, and said strip or ribbon having a series of depressions produced therein to receive active material.

711,917. Storage Battery Plate. Edward H. Winkes, Buffalo, N. Y., assignor, by mesne assignments, of one-half to the American Motor Carriage Co., Cleveland, O., a corporation of Ohio. Filed April 25, 1902. Serial No. 104,622. (No model.)

Claim—1. A storage battery plate comprising a supporting frame and a length of sheet lead folded or corrugated and cut into numerous closely spaced and partially separated strips freely accessible to the electrolyte, said sheet being inserted in, and united with the frame, the folds or corrugations being transverse to the frame, substantially as set forth.

DESIGNS.

36,116. Lamp Body. William Gray, Amesbury, Mass. Filed September 3, 1902. Serial No. 122,014. Term of patent seven years.

Claim—The ornamental design for a lamp body, as shown and described.

Two Motor Garments.

Two articles designed especially for women automobilists have made their appearance. They are the "Adele" combination mask and wrap and the "Desirée" combination mask and hood.

The former refinement has an ample sight piece of clear fine mica firmly attached to the face shape of silky net, which allows unimpeded vision with free respiration and ventilation. The Japanese silk wrap (in any desired tint) is fastened firmly to both mica and net, and by an ingenious and simple arrangement of elastic and ribbon is drawn around the hat and pulled together in "gathers" at back and front of the neck. The front gathers are so arranged that they can easily be loosened for the use of the handkerchief, without any disarrangement of the wrap.

The "Desirée" hood is made with the same combination of mica, net and silk, and covers hat, head and face completely, preventing the powdering of the hair, etc., by the dust

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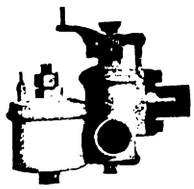
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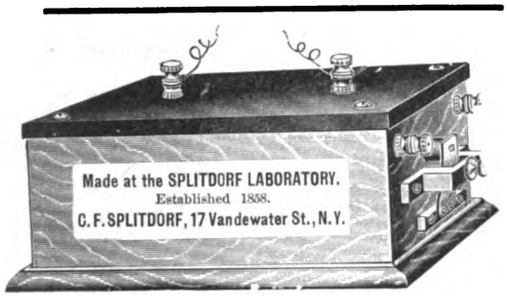
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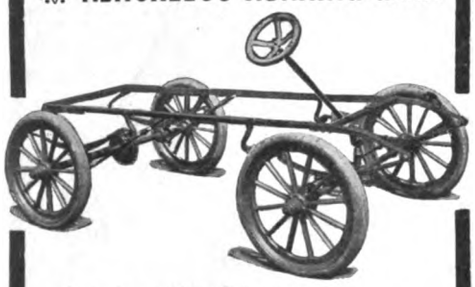
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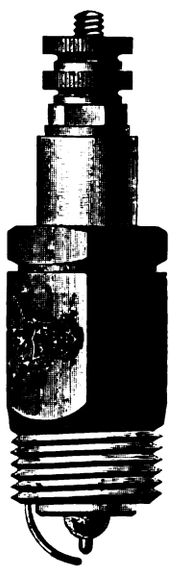


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brought into the back of the car by the following draught. The hood is easily attached by four small buttons placed up the side, and has the same ingenious arrangement of draw silk as the "Adele" wrap. Either wrap or hood is made in neutral shades of silk, viz., pale fawn, dust color, French gray, white or steel gray.

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"How shortsighted some makers are!" remarked an enthusiastic automobilist to the Motor World man. "I was looking at a famous foreign car the other day with the intention of purchasing it when I found that the brakes were single acting. They would not hold the car backward, the only protection in case a chain broke or something else went wrong being to drop the sprag. I immediately gave up all thought of that car and went to another establishment and paid $5,000 for a car of another make. Wouldn't you think the concern referred to would remedy such a little thing as that?"

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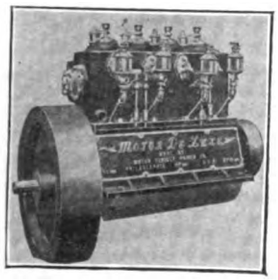
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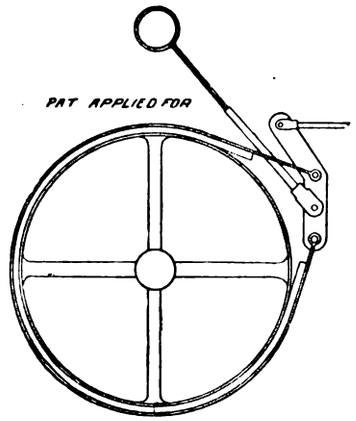
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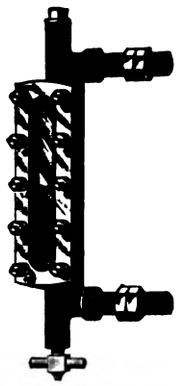
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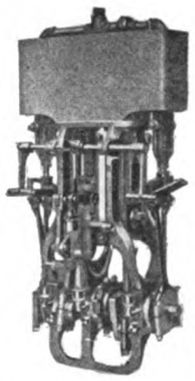
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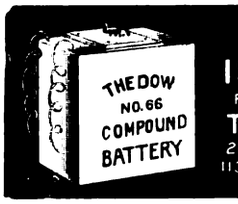
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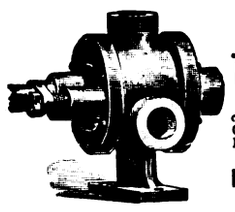


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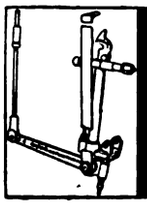
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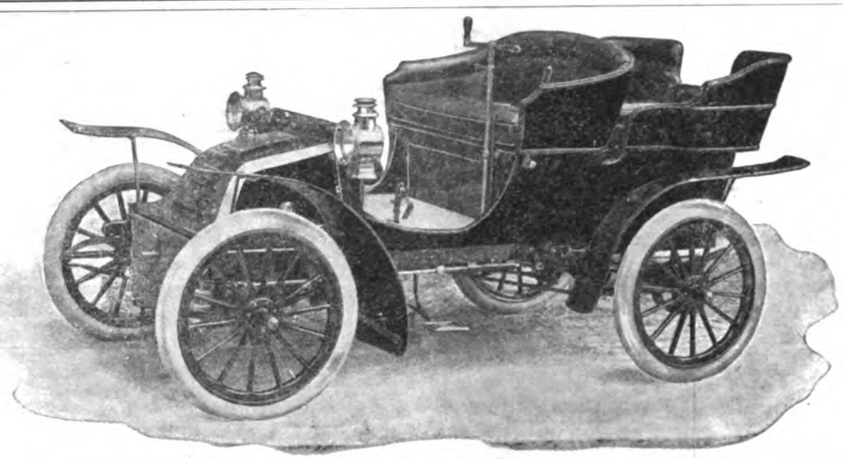
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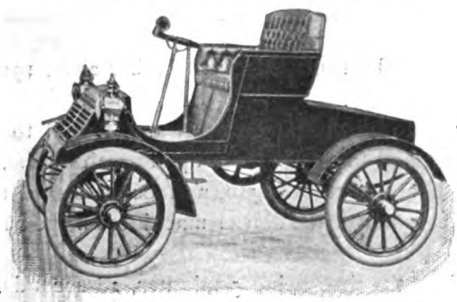
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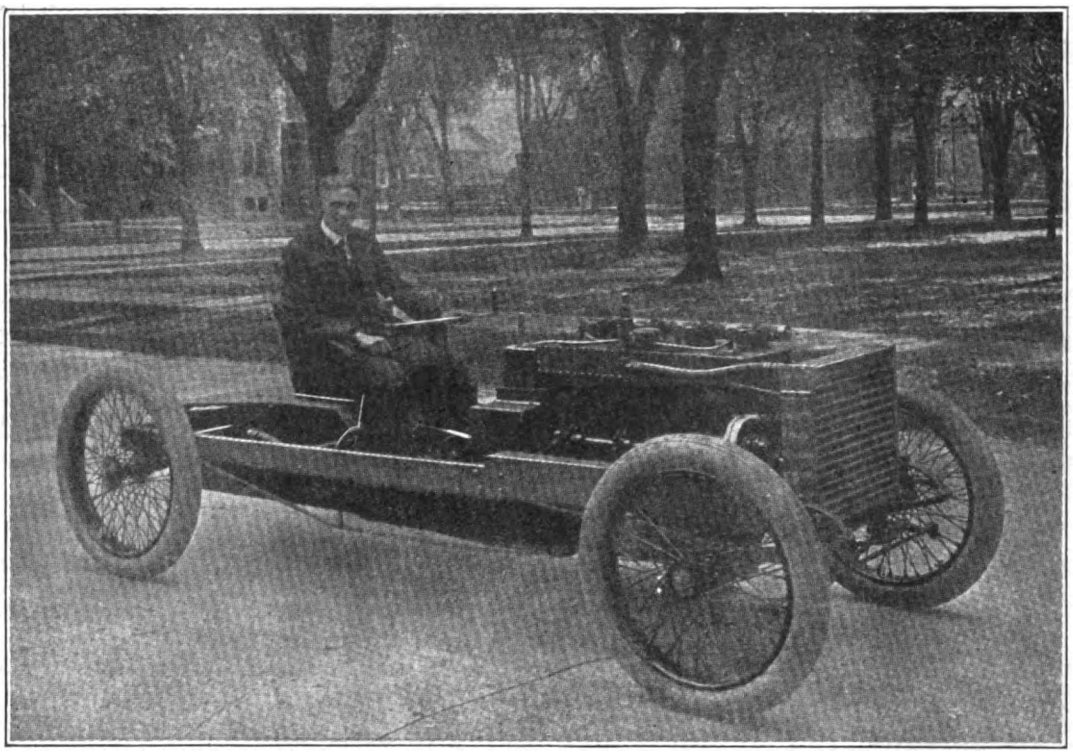
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THE FORD-COOPER RACER

MAKES A WORLD'S RECORD ON

G&J TIRES

The Ford-Cooper Racer, driven by Barney Oldfield, at Detroit, October 25th, made a new world's record for five miles on a circular track in competition. Time, 5 min., 28 sec.



G & J TIRE CO., DETROIT, MICH., October 27th, 1902.
Indianapolis, Ind.

GENTLEMEN:—In reference to the automobile tires I ordered from you to be placed on my racer, I wish to state that the tires were placed on the machine the first of last June and have not had to pump them up since that time.

The machine entered the last races held here on the Grosse Pointe Track, October 25th, and being on the track with five other machines, it had to make some very sharp turns while passing some of the slower machines on the curves. The tires held the curves very well for such high speed.

The machine broke the world's record, on a circular track, for five miles, the time being 5 minutes, 28 seconds.

Yours, respectfully, HENRY FORD.

G&J TIRE CO. - - - - INDIANAPOLIS.

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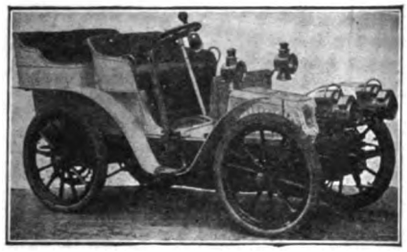
PHILADELPHIA, Allegheny Ave. and 19th St. NEW YORK, 100 Broadway. BOSTON, 60 State St.
CHICAGO, Marquette Building. BALTIMORE, Continental Trust Building. CLEVELAND, New England Building.
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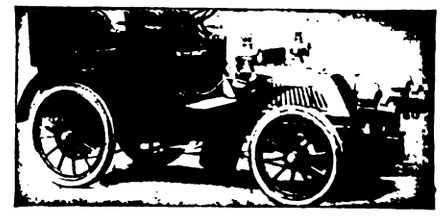
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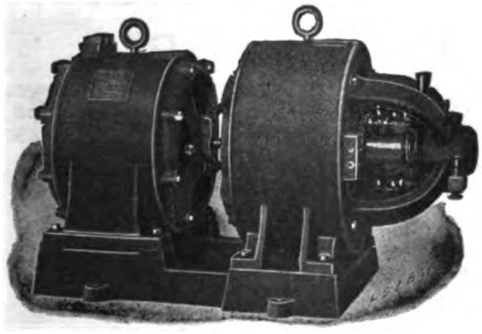
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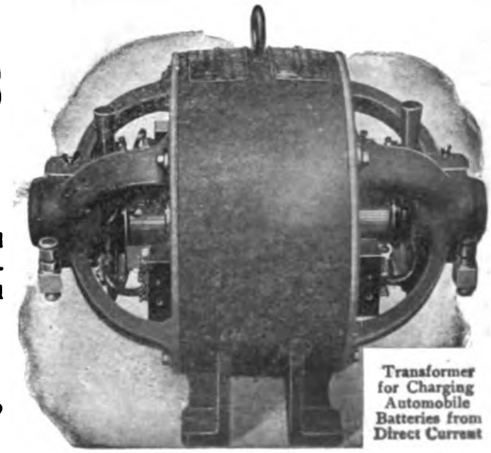
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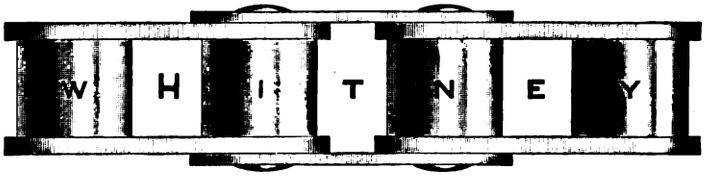
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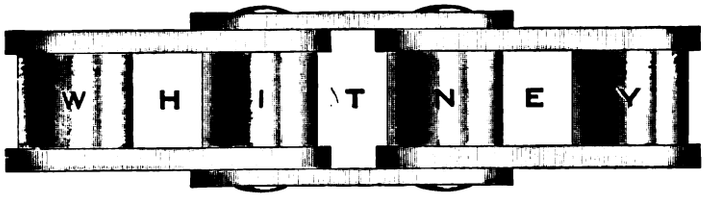
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Accuracy, Durability and Fine Proportions.

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TYPE VIII

5 MODELS

$1700 WRITE FOR ADVANCE SHEET

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ARDMORE, PA.

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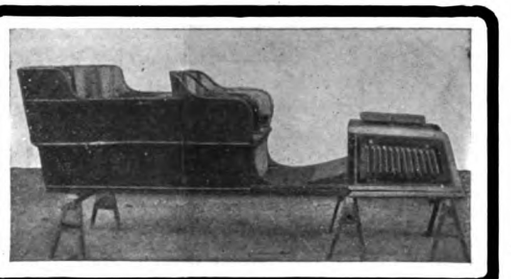
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BROKE THE RECORD.

A Winton Touring Car, on October 15th, ran the 250-mile course between Boston and New York in the remarkable record time of less than twelve hours. The car won a perfect score and had the advantage of complete check by the control officials of the Automobile Club of America's New York-Boston-New York Reliability Run.

The Performance Clipped Six Hours from the Previous Best Record.

This car, owned by Mr. H. Corey, the well known Boston banker, had just been released from customs after completing a several thousand miles successful tour upon the European continent. It was a 15 H. P. car with standard 1902 equipment throughout.

Goodrich Clincher Tire Equipment.

The enviable record of GOODRICH CLINCHER VEHICLE TIRES on track or roadway has not been approached by automobile tires of any other make.

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They Never Vary in Quality or Workmanship Because They Cannot Be Made Better or of Better Materials

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True Economy Represents Buying the Best Wherever You Can Find It

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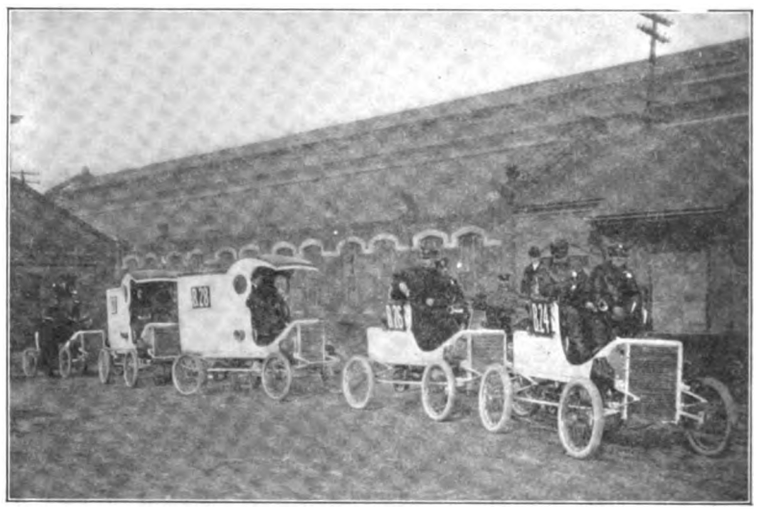
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The three White Steam Stanhopes each received the highest possible award, while of the two White Delivery Wagons, (the only automobiles of this type ever completing an endurance contest) one received a Gold Medal for perfect performance while the other had only one stop—due to its handling.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, November 13, 1902. No. 7

BATTERING THE MILE

Fournier Lowers the Record Only to be Outdone by an Anonymous "Paris Merchant."

After being held by W. K. Vanderbilt, jr., for just one day over three months the world's record for one mile passed into the possession of Henry Fournier on Thursday last.

At Dourdan, about thirty-five miles from Paris, the former holder of the record regained possession of it by covering a measured mile in 47 2-5 seconds. The previous best time, Vanderbilt's, made on August 5, also outside of Paris, was 48 2-5 seconds. Both Fournier and Vanderbilt used Mors racing cars.

After succeeding with the one mile record an assault was made on that for one kilometre. The best that could be done, however, was to administer a slight beating to the French record, Fournier's time being 29 1-5 seconds as against Vanderbilt's 29 2-5 seconds. The kilometre time was given out as a world's record, but the latter stands to the credit of Charles Jarrot, who covered the distance in 28 1-5 seconds on August 22 at Welbeck, England. It is true that the latter is not generally recognized, it being claimed that it is rendered invalid by reason of the course being slightly downhill.

Although sixty kilometres from Paris, no better spot could have been selected by the Automobile Club de France for record breaking, as there is a straight run of four kilometres on a level road, with an open space for turning at each end, and, as it is right up in a forest, the sandy road is only used from time to time by woodcutters' carts, automobilists, cyclists and those on pleasure bent.

Fournier's mile in 47 2-5 seconds was not a week old when "M. Angieres" gave it a sound drubbing, covering the distance in 46 seconds flat. This feat was performed on Tuesday, on the same road, near Dourdan, that was the scene of Fournier's ride. A Mors racing car was the vehicle used.

The new record holder is said to be a wealthy Parisian merchant, who conceals his identity under the pseudonym of "M. Augieres."

Detroit Fixes its Dates.

Formal announcement is made that the second annual show of the Tri-State Automobile and Sporting Goods Association will be held at the Light Guard Armory, Detroit, Mich., February 9 to 14, inclusive. In view of the undoubted success of the show held last February, it was a foregone conclusion that it would be repeated. It is promised that the show will excel last year's, both in size and attractiveness. A majority of the exhibitors have already signified their intention of again taking space. S. G. Lewis, Box 5, Detroit, is the secretary of the association, and all correspondence should be addressed to him.

W. E. Morrison Dies After Operation.

Walter E. Morrison, president of the Dow Portable Electric Co., died rather suddenly in the Polyclinic Hospital, this city, on Tuesday night last. His headquarters were in Boston, and he was here on one of his periodical business visits when his malady, cancer of the stomach, took a serious turn. He was removed from the Herald Square Hotel on Sunday, and the next day underwent the operation, from which he failed to recover. Mr. Morrison was but 37 years of age. He was a particularly energetic and likable man, whose efforts had contributed very materially to the success of his company.

Gash Becomes General Manager.

W. D. Gash has been elected general manager of the Fournier-Searchmont Automobile Co., Philadelphia, succeeding E. B. Gallaher, who recently joined the Mobile Co. of America. Gash was formerly sales manager of the company, and his promotion seems natural, and is the best tribute to his ability, and indication of the appreciation in which he is held by the directors.

The Three A's Annual Meeting.

The annual meeting of the American Automobile Association will be held on November 17, at the rooms of the Automobile Club of America, this city.

Field is Out Again.

C. J. Field, formerly with the De Dion-Bouton and other companies, has relinquished his connection with the trade.

THE FROSTS ARE OUT

Welles and Keck Buy Their Interest and Badger Factory Will now Make Lamps Only.

Owing to the growth of the business in each of the two departments of the Badger Brass Mfg. Co., it has been deemed wise to separate the plumbers' supplies from the cycle and motor lamp business, and to that end C. N. Frost and W. J. Frost have retired and formed the Frost Mfg. Co., for the manufacture of plumbers' supplies.

Their interest has been purchased by Mr. L. J. Keck, who has represented Solar lamps on the road for the past six years, and will continue to do so, and by Mr. R. H. Welles, present treasurer and general manager. With this exception the company will continue as before, except with better facilities for the handling of the rapidly increasing demand for Solar motor lamps, the 1903 models of gas and oil side lamps and headlights, which have met with such favor.

The main offices and factory will be as heretofore, in Kenosha, Wis., but after January 15th the company will open a New York branch, where a complete line of stock and parts will be carried for the better handling of the Eastern trade.

Detroit's Newest Company.

It is the intention of the Imperial Automobile Co., just organized at Detroit, Mich., to manufacture light electric vehicles, such as runabouts, stanhopes, surreys and delivery wagons, using Imperial motors. Orders have already been received for a large amount of work, and several sites for the factory are under consideration, it is said.

Washington Show Set for April.

The Washington (D. C.) Automobile Dealers' Association has decided to hold their annual show—their third—during April next; the exact dates have not been set, but the plans in view contemplate a two-days' race meet on the Bennings track, to occur during the dates of the show.

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RACING REFORMS

Several Movements of the Sort Inaugurated Abroad—French Resent English Interference.

French Bureau Motor World,
2 Rue d'Abbeville.

Paris, October 31, 1902.—Some important changes seem on the point of being carried out in the method of organizing automobile races which have up till now been carried out in a manner that is little calculated to advance the interests of the sport.

Except for one big event, the promoters of all the races and tests has been left in the hands of the automobile papers, which have devoted their energies chiefly to blackguarding each other, and however enterprising they may be they can scarcely be expected to advance the interests of automobolism so much as could be desired when they merely aim at advertising themselves and makers instead of providing useful data for buyers. In view of the rivalry between the papers they cannot, of course, run the risk of courting a failure, and the races and tests they organize are therefore not always of a disinterested character. In hope of attracting the greatest possible number of entries the races are split up into all sorts of categories and classes until there are almost as many awards as there are vehicles competing, and a car must be utterly hopeless if it is unable to get a prize of some sort, which will allow of the maker puffing it up as something of a phenomenon. This is all very well in its way, and there would be no cause for complaint if it were plainly understood that many of these tests are simply carried out for the purpose of advertisement. The public may then draw their own conclusions and not be surprised if they find that a car they purchased does not show up so well as one of an alleged similar type, which has probably been specially prepared for a test or race.

This rivalry between competing journals has also had the effect of creating friction between the authorities who have to sanction the meetings, and this culminated in the recent hill climbing tests when the second Gaillon meeting had to be postponed. As the result of these incidents it is understood that the Automobile Club has decided upon taking all the sporting events out of the hands of the newspapers, and placing them under the management of the sporting commission, which is really the only properly qualified body for organising races or speed tests of any kind. If this is to be done it is to be hoped that the commission will adopt an entirely new series of racing regulations, which will enable the public to judge of the merits of the standard types of cars and not be led into believing that they are the same as the more or less extraordinary vehicles which, however fast they may prove in skilled hands, are utterly unsuitable for the average automobilist. In the case of racing pure and simple, there is, of course, no reason why makers should not be allowed full liberty in the designing of special machines. The public are perfectly aware that the monsters prepared for big long distance races do not represent the types of vehicles they are offered to buy, and it is by allowing manufacturers to experiment in this way that so much has been done for the development of the automobile. They try new devices which, if successful, are adapted to the new vehicles, and there has in fact scarcely been a single race which has not revealed the efficiency of some new mechanism which has done a great deal for the advancement of the industry.

Where a reform is particularly needed is in the method of arranging tests on gradients or over kilometre courses, which are intended to show the capabilities of standard types of vehicles. It is safe to say that there are few makers who send their ordinary cars to compete in these events, and by stripping them of every ounce of weight, and fitting motors of higher powers, they get results that would not be possible with the standard cars, and buyers have no fair data to go upon in estimating the capabilities of the respective vehicles. The misleading character of these performances was revealed at a hill climbing test in Switzerland last month, when points were given according to the co-efficients of weight, power, speed and load, and on that occasion all the light racing vehicles were beaten by the touring cars. A few more tests like these ought to prove very interesting and instructive.

This question of reform in racing is not only beginning to occupy some attention in this country, but it has also been raised by the Automobile Club of Great Britaan and Ireland. It perhaps savors of unwarranted interference for the British club to pose as a mentor of racing, when there are not more than a couple of foreign-built vehicles which take part in international races, and so long as the sport is confined to the French cars it might have been supposed that the A. C. F. could be left as the supreme arbiter of racing until such time as the development of the industry abroad placed foreigners on the same footing as the French. But while this interference may be a little premature, there is no doubt that it was certain to come in the more or less distant future, simply because the English and French look upon sport from an entirely different standpoint, and its management would have to be reformed to meet their respective views as soon as the two were on something like an equality in the number of vehicles competing in international events.

The British Club has sent out a circular to all the Continental clubs, with the exception of the A. C. F., to sound them upon the advisability of bringing about a change in the present regulations. What the English object to is that the sport should be entirely under the control of manufacturers for whose benefit the different events are organized, and they think that the sport should be raised above any question of commercial interest, and placed entirely beyond suspicion. They therefore propose that the international committees should be composed exclusively of members of clubs and owners of vehicles who are not interested in the industry, either as directors, paid officials, makers or agents. The method of timing the cars at controls is also to be changed by having two cards for each competitor, one for the driver and the other for the officials, and upon these cards are to be inscribed the times of stopping and starting at each control, so that there can be no possibility of mistakes such as have proved so troublesome in the past. There are several other points submitted to the clubs, such as the absolute prohibition of a competitor being assisted on the road in any way, and if the different clubs return favorable replies to this circular there is no doubt that the proposed reforms will be brought to the notice of the A. C. F.

Judging from the feelings of makers on the termination of the Paris-Vienna race, it seemed as if the death knell had been sounded for these big international events, and many a manufacturer declared that he would not again allow himself to be put to such worry and vexation in racing over roads he knew nothing about and through a country where the inhabitants and the authorities seemed to have very hazy ideas of the true character and object of an automobile race. As soon as these unpleasant incidents were forgotten, however, the question of organizing a race from Paris to St. Petersburg was again revived and once more postponed until such time as the Russian roads will permit of automobiles travelling at racing speed. In default of the Russian capital the A. C. F. now proposes to organize a race next year from Paris to Madrid. There are very strong reasons for carrying out this event, one of them being political, while it appears that the suggestion has come from a very high Spanish quarter where it is hoped to awaken an interest in the automobile in the Peninsula, and also assist in the creation of a club in Madrid.

At present Spain is the only country in Western Europe which has proved refractory to the motor vehicle. The principal cause of this is the state of the roads, which are not suitable for anything giddier than mules. The Spanish authorities have offered to do all they can to put the roads in good order for the race, but after the experience of the Arlberg last June, where "repairs" were also carried out, the A. C. F. would be very unwise to rely upon these promises. The club has decided to send a delegate to Spain to examine the three routes that may be taken, and if it be found that high speeds are impossible the race will probably be transformed into a reliability test, when each maker will enter half a dozen cars, and points will be awarded for their aggregate performances. It is probable, however, that the course from Paris to Bordeaux will be covered at racing speed.

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NILES ON KELLOGGISM

The Counseller Throws Light on Clouded Points and Hints of Grave Breach by Kellogg.

It would appear that the Automobile Club of America and the American Automobile Association are not to remain entirely quiescent in the case of Judge W. C. Kellogg, the "Man of Yonkers," whose territory automobilists must approach in fear of jail. Counsellor W. W. Niles, of New York, who represents both the Club and the Association, is inquiring deeply into the recent cases that have come before the Yonkers Dogberry who believes in stripes and bars for those who handle a steering lever on an automobile.

With so thorough a lawyer interested in the proceedings of the Yonkers court there is every reason to hope for some reactive results that will be gratifying to the automobile public at large. Naturally, Mr. Niles is conservative in his expression of opinion. When a representative of the Motor World called on him to inquire about the legal aspect of the "justice" being dispensed by Mr. Kellogg, he did not say whether or not any line of action had been decided upon

The Motor World man asked him whether in his opinion it was legal for Judge Kellogg to sentence Paul Richards to ten days in jail because he was exceding the speed limit. Mr. Niles replied:

"But, you see, that is where Judge Kellogg has the better of it. He does not try the man under the Cocks law. There is no charge of excessive speeding against him, but a charge made under the common law and the Yonkers charter of endangering life and limb or something of that sort. The common law is the thing which we stand for, and we maintain that it is a mistake to have a speed limit of any sort. That it is wrong in fact, because it permits of a certain rate of speed when the local conditions may not warrant it. The law that prohibits reckless driving and the endangering of life or limb is sufficient."

"Mr. Niles, if a man is running an automobile at a very high rate of speed, well beyond the limit of the speed law, on a road that is all clear ahead of him, on which there is no vehicle or person in sight, could he be convicted for endangering life or limb on the theory that someone might get in front of him and that he was going too fast to stop in time to avoid disaster?"

"That is where the weakness of the common law comes in. As you put it, I should say no, but a judge might decide otherwise."

"Concerning the ordinance proposed to license automobiles, Mr. Niles, you have noticed probably that Mr. Thompson says that the city charter granting power to the municipality to regulate and license traffic supersedes the State statute commonly known as the Doughty law, which prohibits cities from passing such ordinances. In a case of conflict such as this, does not the State statute have precedence over the city charter?"

"That is a matter for the court to determine. The Doughty bill was passed a few days after the New York city charter. Personally, I hold a different opinion from Mr. Thompson, but nothing absolute can be said in a case of conflicting law until a decision of the intent of the statute has been delivered by the court."

"In such cases is it not generally true that precedence is given to the later enactment?"

"As a general principle of law, yes. In common practice the supersdence would be given to the statute passed after the charter."

"Now, if that is true in the case of the charter of Greater New York, Mr. Niles, why does it not hold good with regard to the charter of Yonkers under which Raymond was sentenced and now Richards? Why should not the Yonkers court be bound by the State law?"

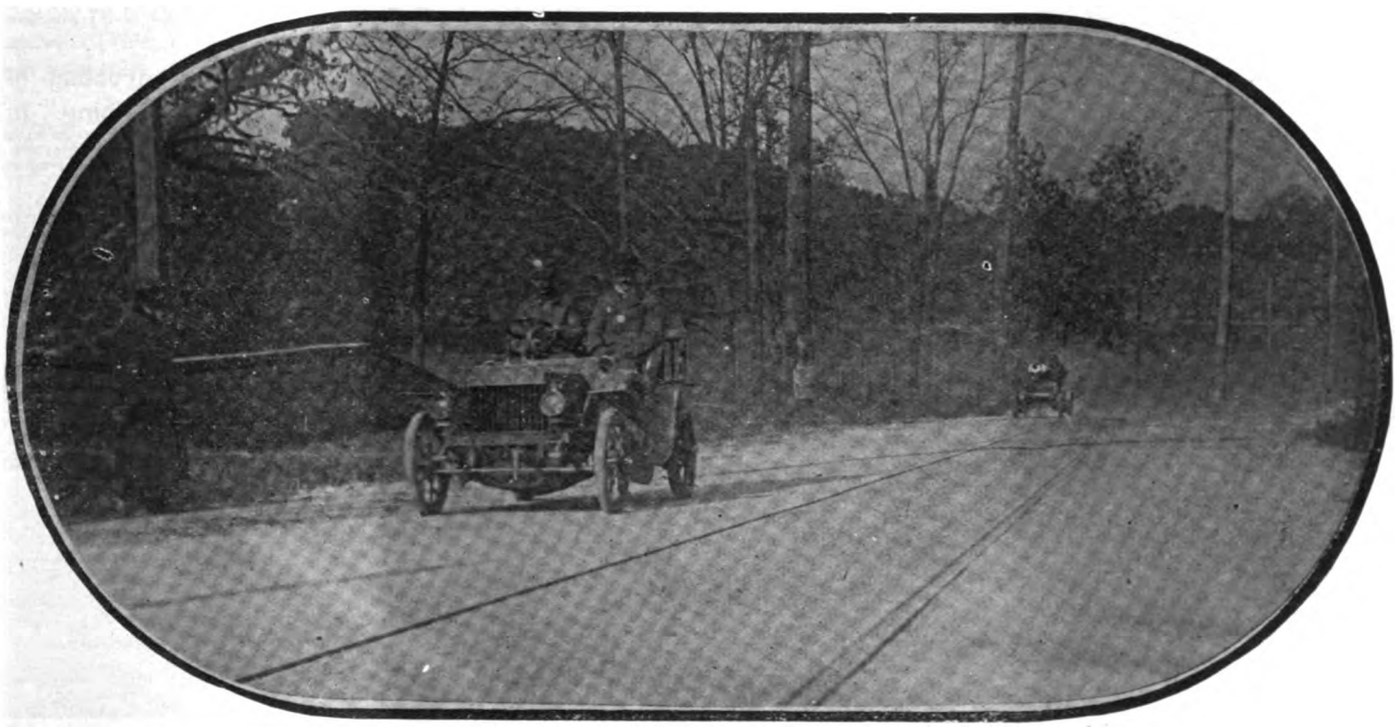
"I am still investigating these cases. I believe that it was not under the charter or under the Cocks law that Richards was sentenced, but under the common law."

"Mr. Niles, in the case of a magistrate who has openly expressed prejudice against a certain class and a resolve to punish severely all of that class brought before him, what would be the legal procedure to remove such a man from the bench?"

Mr. Niles spent some time looking through his statute books. He said that there was a provision for the removal of a city judge by the Governor when corruption, negligence or incompetency was proven, but as for charges of malfeasance or persecution, he preferred to say nothing until after he had looked up the law.

"If a magistrate, speaking from the bench, from his seat of office, gave utterance to sentiments of bias and plainly showed that he was determined to prejudge a case, regardless of legal evidence, would that not be grounds sufficient for impeachment?"

Kellogg to take a counter charge, in the Kellog to take a counter charge, in the Raymond case, is, if true, a very serious matter."



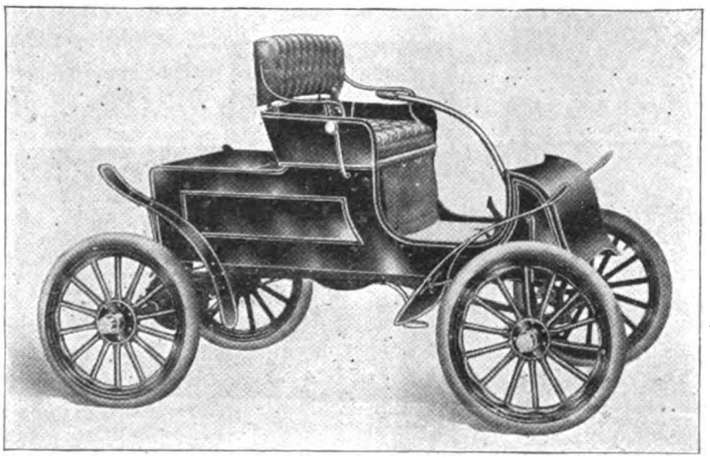
CAUSE FOR SUSPICION: THE LONE AND TOO-WATCHFUL MAN AT THE ROADSIDE, HANDERCHEIF IN HAND.

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We're too busy to say much

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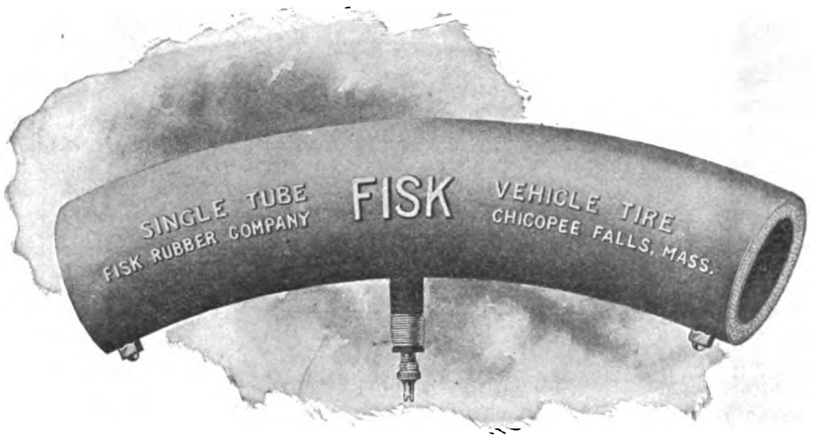
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THE MOTOR WORLD
DEVOTED TO THE AUTOMOBILE
And Kindred Interests

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To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

CABLE ADDRESS, "MOTORWORLD," NEW YORK

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NEW YORK, NOVEMBER 13, 1902.

Purchasers and Their Whims.

In these times when, generally speaking, the demand exceeds the supply, the unbending policy adhered to by not a few manufacturers may work no immediate injury to their interests, but when a normal condition of trade is reached there may be another story to tell.

We refer to the stubborn refusal of some makers to indulge the slight whim of the purchaser paying $1,000 and often as much more for a car. Of course, we appreciate that so far as they relate to the mechanism of the vehicle, refusals to cater to the whims of the sort are justifiable and proper. But so far as concerns the finish and equipment it seems to us a little latitude would go far toward earning the good will and friendships that bear on the future.

An instance of the sort involving manufacturers of no mean reputation, recently came to our notice.

"They are the most disobliging people I have met in some time," said the party in interest—a man in no wise connected with the trade. "I had already bought one of their cars, and in placing an order for another, I asked only that the body and the upholstery be finished in a color different from the standard, and offered to pay $200 extra for the service. My request was met by a curt and point blank refusal. If I had not offered to pay for it, I could understand the manufacturers' attitude. As it is, it has left a bad taste in my mouth, and if ever I make another purchase it probably will be from another manufacturer."

They say it is the "little things" that count, and to our way of thinking, whims such as this are included in the category. Catering to them when it entails no loss would seem to come under the head of "good business," and makes for satisfied customers.

No Cause for Apprehension.

Fears are entertained in some quarters that sales of second-hand cars will result in harm to the dealings in new ones.

Especially keen is this apprehension where the runabouts and similar light and cheap vehicles are concerned. Every year their number increases, and if buyers continue to snap them up with avidity it is asked where customers for all the new cars will be found.

Those who entertain these fears overlook one very important fact, to wit: that it is price that attracts these buyers, and that the only thing that to-day stands between a majority of the people of the country and automobiles is the matter of price. Were they procurable at nominal figures, were their purchase a mere bagatelle, ten times the present factory output would be insufficient to meet the demand for them, and the roads would swarm with automobiles as they once swarmed with bicycles.

The sale of an automobile is to be likened to tossing a pebble into a placid pool; the ripples caused by the one act spread in ever widening circles, while the influence of the other is exerted in every direction, each person with whom the buyer comes in contact being made aware of his action.

The trade in this country has reached a stage where even its second-hand vehicles have a real value.

There are no longer any thoroughly bad automobiles—or at least, very few. The vast majority of them show a wide variance in the matter of excellence, but there is some good in all of them, and of this good the user will taste and have his appetite whetted for something better.

It matters little whether he belongs to the class of men that can or cannot afford to pay more than a second-hand vehicle costs. In the former case he will unloose his purse strings as soon as he becomes convinced that it is good policy to do so, and that by paying more he can obtain greater value for more money. In the latter case the possession of a cheap vehicle will inevitably breed a desire for something better, and once that desire is born, ways and means to gratify it will be found.

In some industries it is the practice to break up goods that have become second-hand, or to use other means to check their sale.

In the automobile business just the reverse policy should be, as it is, followed. Every effort should be made to disseminate the knowledge that there are second-hand automobiles to be had, and that they are good value for the money. No fear that the sale of such cars will interfere with that of new goods need be entertained. In a few cases, perhaps, this fear may be well founded. But the number is so small and the beneficial effect of such sales on the trade in general is so great that the balance will be enormously on the latter side.

Woodbury and His Squee-gee.

Mr. Woodbury, New York's Street Cleaning Commissioner, and his squee-gee are good things, and it is to be hoped that they both will remain in office and in perfect working order for some time to some. There is no doubt about the earnestness of the Commissioner to give the city clean streets and deal with the asphalt so that it shall not be slippery to the tire of the automobile. Also there is little doubt but what the squee-gee can be modified so as to fit the crime of the asphalt in being so irregular, and when this is done the asphalted avenues can be washed and dried like a school boy's face and left with a surface affording a good tire-hold for vehicles and a good foothold for horses.

In connection with the squee-gees that would not work, because they were hastily constructed and did not meet the requirements of the undulating pave, it is ventured here to make a suggestion to the Commissioner. Let the squee-gee instead of being in one piece, ten or twelve feet long, be divided into several pieces like teeth, but with no space between. Then above each

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tooth have a spiral compression spring, so set that on the level surface it will be partially compressed and will give pressure to the blade and when a depression in the surface is encountered it will force the tooth into it. It would, of course, be necessary to have a pair of such squee-gees on a machine, in order that the rear one might swab the places left untouched because of the division into teeth. This suggestion is, however, a digression.

After Fifth avenue has been properly equipped with made-to-fit squee-gees, what is to be done with the other asphalted avenues running north and south, every one of which has a railroad slot along it? The Commissioner frankly admitted before the aldermanic committee that these slotted streets cannot be flushed and squee-geed like Fifth avenue, because the water running into the conduit would cause short circuiting. After all it seems that for some things even in these mechanical days we must fall back on the good, old fashioned and reliable hand-power. When this was put to Commissioner Woodbury and the question asked why it would not be best to have the squee-geeing done manually, as it is in London and Paris, the Commissioner exclaimed: "But think of the tremendous cost of that!"

Tremendous cost? Well, they do not think so in London and Paris. New York in proportion to population can better afford the expense. Why should we not have clean, safe streets no matter what the cost? The health and comfort of the whole population, the utility and safety of all the city's traffic hangs in the balance of clean streets and asphalt that is not treacherous.

Commissioner Woodbury has made up an estimate of $161,830 as the cost of establishing a plant and putting this work wholly in charge of his department. He estimates an additional cost of $197,480 a year to run it. It may seem like a lot of money, but it is a trifle in a city like New York when so much is at stake. When the city budget for next year is made out the Department of Street Cleaning should have this matter in hand with the necessary funds. It should have more money, too; enough more to enable the department to properly scrub by hand during the night every foot of asphalt in the city, so as to render it safe for the traffic of the day.

It is the proper province of the automobile trade in New York and in every city to bring its influence to bear in such matters. The manufacturers and agents are overmuch given to leaving agitations of this kind to the clubs and other societies. Whatever makes for good roads, for better streets, for better and safer automobiling rebounds directly to the advantage of the maker and dealer. When certain things are needed the pressure should be put on to obtain them. Whoever has influence should make it felt, and every one has influence. It is not enough to have a manufacturer's association represented by its counsel at a public hearing. It is the earnest voice of the individual who is interested that counts. Let the automobile trade, that represents so much capital locked up in this new and important industry, rally to the support of the Automobile Club, the horsemen and the cyclists in all such efforts.

Good Out of Bad.

The enormous popularity of the motor vehicle is to be accounted for in a number of ways.

Its intrinsic merits, manifest destiny and the like may well be put forth as reasons for it. What must be will be, and the inexorable law that demands the gradual retirement of the horse from city streets and, as a draft animal, from country roads, can neither be gainsaid nor its workings impeded or interfered with.

But another theory—fantastic and even grotesque—can be advanced to enlighten a waiting world on this matter of the general favor of the motor vehicle.

It is that advertising, and, speaking more pointedly, the advertising of its enemies, has had much to do with it. We may not go so far as to say, as was said of a distinguished statesman, that "we love it for the enemies it has made," but we are quite within bounds when we declare that nothing can be kept constantly in the public eye, abused in season and out, maligned, painted a very monster, without some of the torrent of vituperation recoiling on its authors.

No one can question the value of advertising. And if the advertising be of the dubious kind that so many of our friends have seen fit to favor us with of late, it differs only in degree from the more desirable sort that is usually bought and paid for.

For months the automobile has been on every tongue, on well nigh every page, frequently in a dozen different articles, of the average newspaper.

People who, in the ordinary course of events, would either not have heard of it, or would have paid no attention to it, have had it forced upon them that the motor vehicle was one of the most active and positive forces of the day. Its very ubiquity would tend to do this. Whether it was loved or hated made no difference. There it was, and it could not be got away from.

It is beyond question that if automobilists had had the doing of it the motor vehicle would have come in for a much smaller degree of attention.

But more powerful influences intervened, and the result has been what we see. We may squirm a little, and wish for a little less publicity, but we certainly are getting all the advertising we could possibly desire.

Kelloggism Rampant.

Again the fine judicial temper of the Kellogg sword of justice has been demonstrated. This time it was a chauffeur of New York City, Paul Richards by name, who was the victim. There seems to be no doubt but what Richards was guilty of excessive speeding in the town of Yonkers, and should be punished. There is a State law that provides for a fine of $50 in such cases.

The State statutes are not good enough, however, for the Solon of Kelloggtown. He must needs rake up some law under which the man who runs counter to his prejudices can be put behind the bars. Richards got ten days. It seems a pity that Kellogg cannot find a law permitting him to hang reckless chauffeurs in the public square. It must make him sad to think of the fun he is missing.

How long is Yonkers and New York going to stand this sort of thing? Until Kellogg violates every principle in the Constitution of the United States? Well, as Abraham Lincoln said: "For people who like that sort of thing, it is probably just the thing that such people would like."

An old saying runs to the effect that if you want to learn about anything of which you are ignorant you should write an essay or lecture on it. Apparently this is the motto responsible for many of the newspaper "specials" designed to instruct a benighted public on automobile subjects. Even the New York luminary that boasts of everything in it being "so" has fallen prey to an expert who solemnly tells of what is coming to pass and prints a picture of a big gasolene car as a type that is disappearing, and another picture of a little steam runabout as that of a type which is becoming popular.

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SRRINKLING AND SPEED

Laws Affecting Both up For Hearing and Provoked Interesting Debate.

The great growth of interest in street and road matters and traffic regulation was well exemplified last Friday by a lively and important session that was held before the Law Committee of the New York Board of Aldermen. The meeting was called in order to afford a public hearing on three ordinances now before the City Fathers. One is a bill requiring that the ten year contract of the Street Sprinkling Association with the city, which expires next March, shall not be renewed, but that the sprinkling of the streets shall be placed in charge of the Department of Street Cleaning. The second ordinance up for a hearing was that regulating traffic on the streets, commonly referred to as "rules of the road." Both of these were introduced by Alderman Joseph Oatman, president of the Associated Cycling Clubs of New York. The third ordinance was one introduced by a certain Thompson, of New York, proposing to license and tag automobiles, in spite of a State statute prohibiting any municipality from so doing.

These subjects brought out a distinguished company. Among those who participated in the discussion were the president of the Society for the Prevention of Cruelty to Animals, John P. Haines; the president of the Automobile Club of America, Albert R. Shattuck; Commissioner of the Department of Street Cleaning, John McGaw Woodbury; the president of the Associated Cycling Clubs of New York, Alderman Joseph Oatman; the counsellor for the Brooklyn Rapid Transit, Thomas L. Hughes; the secretary of the Hackmen's Protective League, Robert Winston; the chairman of the Committee of Fifty, J. Bayard Backus; the secretary of the Road Drivers' Association, Alfred Reeves; the president of the West End Association, J. L. Brower; the counsel for the National Association of Automobile Manufacturers, W. W. Niles; the president of the Road Users Association, Jefferson Seligman, and R. G. Betts, of the New York Motor Cycle Club.

Thompson, who has been pushing himself well to the front in this matter, lost no time in taking the centre of the stage and getting into the lime-light. He called attention to the fact that he had drafted the sprinkling ordinance. The history of the bill is that it was first proposed before the Associated Cycling Clubs by Alderman Oatman that such a bill be drawn. It was then carried to th meeting of the Associated Road Users, and the co-operation of the automobilists and road drivers and cabmen obtained. Thompson, who was for that meeting representing the State Division of the L. A. W., volunteered to draw the ordinance, and did so. After it was read and revised by the Road Users it was formally introduced.

Thompson recited at length the grievances of sloppy and slippery asphalt, the danger of it to horses, vehicles and persons, and the fruitlessness of the many attempts to have the Street Sprinkling Association abate the nuisance. He explained that the Sprinkling Association was a West Virginia corporation, incorporated with a capital of $700, and that it paid the city a lump sum every year for whatever water it used, and watered streets wherever it could get the residents along them to pay a weekly toll, and did not water others.

When he had finished, Thompson, with an authoritative and condescending air that made Alderman J. C. Meyers, who was then presiding and others, smile, waved his hand toward Commissioner Woodbury, and said: "We will be glad to listen to you now."

It was evident from the outset that Commissioner Woodbury was "loaded for bear." He had his hands full of papers that proved to be estimates of cost, and charts showing how the street cleaning work of the city is done. The Commissioner launched his theme by explaining the peculiar nature of asphalt,



THE FAMILIAR QUESTION: "WHICH WAY?"

which caused a film of gummy substance to form on its surface from the crushed refuse of the street. This gum, when simply wetted, is loosened, and with the water forms a slime that is very slippery. When, however, the surface of the asphalt is flooded and then gone over with squee-gees, as is done in London, the gum is scraped off and the clean asphalt offers a splendid surface for the foothold of horses and an excellent traction for all sorts of vehicles. He went on to say that it is possible to handle the matter of street sprinkling in two ways, one by letting the work out at contract, under which method it would be very difficult to get satisfactory service, and the other by placing the whole thing in the charge of the Department of Street Cleaning and having the city do the work itself. He favored the latter way, and at the request of the Law Committee had prepared an estimate of what it would cost to establish a plant and the annual expense of running it. The estimate was for sprinkling not a part of the streets, but all of them in Manhattan and the Bronx. To sprinkle Brooklyn he estimated would cost 60 per cent. more. Richmond and Queens, under the new charter, are not in the jurisdiction of the department. This is a summary of his estimate:

Two hundred sprinkling trucks at $250 each, $5,000; four hundred and forty horses at $247 apiece, $108,680; seventy sets of harness at $45 a set, $3,150. Total cost for establishing a plant to be met by bond issue, $161,830. The running expenses he figured thus:

Two hundred drivers for eight months at the rate of $720 per year each, $96,000; forty hostlers for eight months at the rate of $840 per annum each, $22,440; feed for 440 horses for a year, $55,000; shoeing, $14,080; stable rent, $10,000. Total yearly cost to be met by appropriation, $197,480. Grand total for first year, $359,310.

Alderman Isaac Marks took an active part in the proceedings up to a certain point. He cross-examined the Commissioner, asking many pointed questions about matters of expense and the effect upon the water pressure of the use of the city water for sprinkling. The Commissioner was quick, lucid and incisive throughout. Alderman Oatman brought out the fact by a question that salt water would be better than Croton water for washing purposes. Alderman Marks asked the Commissioner why the substitute ordinance which he, Marks, had prepared, was not better than the one under discussion. The Marks ordinance calls for the letting of contracts for the sprinkling of each borough by the borough president, after bids have been submitted by persons who had experience in street sprinkling. The Commissioner thought it would be unwise to divide the work and the responsibility for street conditions between the Department of Street Cleaning and the Borough President.

Mr. Thompson called attention to the fact that, as it is drawn, the ordinance proposed by Alderman Marks, which requires that only those with experience could bid for sprinkling contracts, would permit only the Street Sprinkling Association, which is now being inveighed against, to bid. Furthermore, he expressed his opinion that Section 471 of the charter prohibits the award of any contract to use the city's water to any private firm or corporation. After this Alderman Marks did not speak again.

Robert Winston, of the Hackmen's League, was a character. In a rich voice, that had just a touch of the Coster in it, he said that he had driven a cab in London, Paris, Berlin, Melbourne and New-York, and thought he knew something about street sprinkling. He was pithy and pointed. He told of the difficulties of the cabmen with horses that fall on slippery asphalt, and told how they do it in London. There they wash the streets and squee-gee them between midnight and 4 o'clock in the morning, and after that they are sanded. He frankly advised the Commissioner to adopt this method, saying that the cabmen were in favor of the ordinance and would do all they could to help the department. If sand boxes were placed at different points about the city, the cabmen, he said, would be only too glad to help themselves and sprinkle it for their horses. Many

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a winter night, he said, the cabmen went hunting desperately for ashes when the paving was so slippery that a horse would fall six or seven times to the block.

President Haines of the S. P. C. A. said that every year his agents had to kill many animals that had been hurt by falling on slippery asphalt. He favored the ordinance. President Shattuck and W. W. Niles also spoke in favor of the measure.

When the rules of the road were taken up, Mr. Backus, of the Committee of Fifty, was promptly on his feet to oppose the increase in speed for automobiles from eight miles an hour to ten miles. President Shattuck explained how ridiculously slow eight miles an hour is, saying that at that rate it would take five hours to go from one end of New York to the other. He said that the automobile was safer than a horse, and read from The Motor World of October 30 the statistics showing the number killed and injured by different vehicles of transportation.

Mr. Brower, of the West End Association, was on hand, as usual, to repeat all of his usual arraignment of the automobile, that threatens the lives of old women and children. He said it was the exception to see an automobile moving at the legal rate of speed. Alderman Armitage Matthews, who had come in late and taken the chair, suggested that the same was true with regard to victorias on Riverside Drive.

Horace Parker, of the Committee of Fifty, recited a lot of figures concerning the number of automobiles and horse drawn vehicles passing a certain place, and the speed of them. Of fourteen motor vehicles timed, he found not one that was within the speed limit, and one was going faster than twenty-five miles an hour. He objected to permitting motor vehicles to go faster than horse drawn carriages. Mr. Shattuck said that the figures were unreliable, and about proved it.

R. G. Betts suggested as a solution of the difficulty that no discrimination in favor of the automobile be made, and the horse drawn vehicles also be allowed to go ten miles an hour, which is very slow. This immediately brought to his feet James Brown, of the Hackmen's League. With an accent that faintly suggested Bow Bells he said:

"That's it! Pass the ordinance, and let the cabs go ten miles an hour, too. Bless my heart! Ten miles an hour ain't nothing, and eight miles is awful slow. Why, I drive fifteen miles an hour every night, and sometimes twenty miles an hour."

"I'd like to hire your cab sometime," interjected Mr. Shattuck.

"Well, I've the best cab in town, and $100 to say that I can beat any blooming automobile with it. I've gone from Twenty-sixth street to One-hundred-and-twenty-fifth street and back in forty minutes more than once—there and back, mind you!"

"How long does it take you to drive around the park?" asked Alderman Matthews.

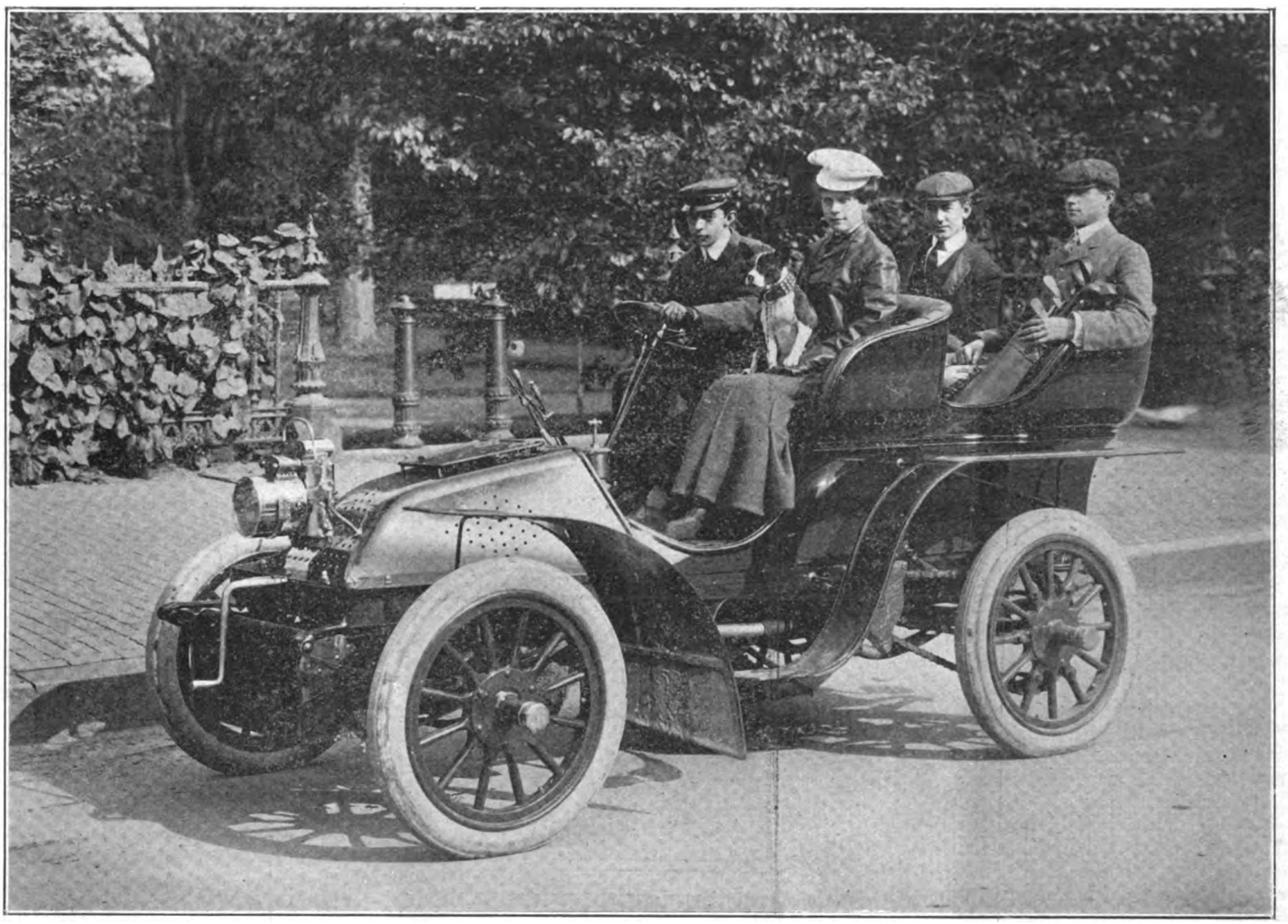
"That depends entirely upon the fare, you know."

"Well, I mean doing it leisurely and not driving hard."

"Taking it real nice and easy, I can go around in forty minutes. I could do it in twenty-five minutes."

Counsellor Hughes, of the Brooklyn Rapid Transit, wanted the ordinance to provide for the carrying of rear lights at night by farmers' wagons. He also suggested that horse drawn carriages should be made to slow up before crossing streets, the same as trolley cars are required to do.

The license ordinance was not reached, and after a three-hour session the hearing was adjourned without date.



MR. AND MRS. BYRON CHANDLER, OF NASHUA, N. H., IN THEIR TOLEDO GASOLENE TOURING CAR.

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Commentary

I'm a little late I know, but I want to shy my little half of a brick at that learned luminary of the law who is content to hide his greatness in the vast city of Yonkers—his honor Judge Kellogg, no less. Of the justice of railroading a man to prison for the awful crime of being run in to from behind I will say nothing, though use of the word "railroading" makes me think how queer it would seem to have the engineer of the leading train arrested and sent to prison should, on a perfectly clear track and in broad daylight, another train overtake his, run into it and injure a lot of passengers in the overtaker's train. Of course, substituting a trolley car for the overtaking train and an automobile for the leading one this is just exactly what happened at Yonkers, but little things like reason or common sense have no weight with a modest, austere, upright man like Judge W. C. Kellogg. I always admired this gentleman ever since I saw his picture in a yellow journal along in last May. Accompanying the picture was an alleged interview, in the course of which this learned lawgiver sapiently remarked:

"Apparently the rich do not care what happens to those who get in their way. A little boy, a girl, an old man or an aged and bent woman would meet a like fate beneath the wheels of an automobile. The fact that the drivers of these automobiles are rich and of social prominence has no weight with me. I would fine Vanderbilt or any other rich man as soon as I would a poor man. I can foresee a great social revolution unless there be a change in the attitude of the rich toward the poor."

Imagine a judge who would so far forget the dignity of his position as to preach such rot and encouragement of anarchy as the foregoing, to still have the audacity in sentencing a man to prison for the heinous offence of having been run into by a trolley car which overtook him, to say, as Judge Kellogg did when he sent Raymond to prison:

"The conduct of this defendant was reprehensible in the extreme. I have no prejudice against automobilists and bicyclists in general, but they must be made to understand that the general public has rights on the highway which they must respect."

Were the Pharisee of old to return to this life he would find that he had much indeed to learn from his successor and superior, Judge W. C. Kellogg, of Yonkers, N. Y.

* * *

As many who have tried to travel the road in an automobile have learned to their sorrow, invention is generally a mighty rough route to Easy street.

* * *

Mulai-Abd-el-Aziz, who it will be remembered on the occasion of President Roosevelt's escape from exactly the same kind of an accident which Judge Kellogg has sentenced Mr. Raymond for, took occasion to send a cablegram congratulating the President on his escape from an automobile, is in a fair way to ask for a return message from the President. While, of course, there was no automobile in any way connected with the President's accident, still Mr. Aziz had probably seen a copy of some yellow journal, and from it quite naturally concluded that there were no accidents of any kind in America for which the automobile was not to blame, hence his cablegram to the President. Now comes the news, also by cable, that the subjects of the Sultan have threatened to break out in rebellion. They stood for Aziz when he got a telephone, they took their medicine when he built a narrow gauged railroad, but every blessed donkey boy, camel clubber and horse thief in Morocco drew the line when the progressive Aziz showed up with an automobile. What the result will be depends upon whether the purveyors of news and law in the Sultan's domains are of the saffronic and Kelloggian stripe. If they are, then Allah will have his hands full saving Mulai-Abd-el-Aziz, sure as shooting!

* * *

Automobiling has its share of Smart Alecks, but even in it no one has ever seen a really smart Aleck.

* * *

One of those little birds which apparently have no province in life but to make public things which are not always pleasant when told in the market place is doing a lot of piping of late. The burden of the little bird's lay is "Graft." I am not prepared to say that either this particular little bird or his especial little song are just as true as they should be, but I'm blest if some of the things the little bird sings of are not apparently borne out by corroborative evidence. At any rate, if there is anything in the theory that one's ears burn when some one is roasting their owner, then there should be a mighty warm pair of auricular appendages not a million and six miles from the corner of Fifth avenue and Fifty-eighth street.

* * *

Some people can be made to believe anything about an automobile except that they don't know anything about it.

* * *

Many an unlucky and unmechanical purchaser has found himself with an automobile whose unreliability and unsalability have made the vehicle closely akin to a white elephant on his hands. No matter how anxious such a man might be to dispose of his automobilic white elephant, however, I doubt whether even in his wildest dreams he ever thought of trading the offending vehicle off for a real, live, trick elephant! As proof that such a seemingly improbable exchange could be made, however, I reproduce herewith an advertisement clipped from the columns of a New York daily which makes a specialty of catering to swappers. This is the advertisement:

"Wanted to exchange—Topsy, a full grown elephant, for an automobile. Address Luna Park and All World's Amusement Exposition, Coney Island."

Great chance for lunatics, eh!

* * *

Dealing with the above advertisment brings to my mind another one I read in the columns of the New York daily which has been most persistent in its attacks upon the automobile and the "millionaire murderers" who employ the vehicle solely for the pleasure they find in running over and killing inoffensive "poor people." The advertisement was a boiler plate affair, showing a tousle headed female seated in an automobile, which she was steering without any regard to where she was going or how, since she was too busy reading an automobile handbook to look. Beneath this electrotypic work of art came this announcement:

"An auto blew up the other day. They are blowing up constantly. Auto wrecks are becoming common. Why? Ignorance! ignorance of their mechanism, proper care and management. Send for our free booklet, forty-eight pages of 'hints.' . . . It will prevent explosions and accidents. It will teach you in simple, non-technical language the care and management of all types of autos."

* * *

Imagine the sagacity of an individual who from the very nature of the thing he is trying to sell or give away must be interested in the growth of automobiling, printing such untruthful and alarming statements as those contained in the opening of this brilliant advertisement. Verily, automobiling has more than its fair share of afflictions similar to this one!

* * *

Advertising an automobile is very much like preaching—you have to keep at it to make any lasting impression.

* * *

One more friend of our cycling days has left the old for the new; the two wheeler for the four. The genius who has a perfect substitute for the pneumatic tire in a complicated mass of springs has had his press worker announce him as the savior of the automobile. In the good old bicycling days geniuses of this particular and vibrationless brand were so plentiful that they were classified in the nuisance calendar in bunches, their numbers preventing them from being reckoned with singly. You don't see any bicycles without pneumatic tires, do you? No; and you'll not see many automobiles without pneumatics, either, springs and geniuses to the contrary, notwithstanding.

* * *

It is not wise to believe all you hear about the wonderful record performances made by this owner and that, but at the same time it is well to use discretion in your declarations of incredulity.

THE COMMENTATOR.

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WOODBURY'S SQUEE-GEES

Waring's Worthy Successor Shows how They Contribute to Cleaner and Safer Streets.

In the frosty chill of last Saturday morning Street Cleaning Commissioner John McGaw Woodbury sallied forth at 7 o'clock to demonstrate on Fifth avenue his idea of how asphalt should be cleaned in order to make it present a gritty surface on which pneumatic tires would find enough traction to keep them from skidding and horses might get a sure foothold. It is highly creditable to President A. R. Shattuck, of the Automobile Club, to record that he was on hand in response to the Commissioner's invitation at 7:30 o'clock, in his Panhard. Paul H. Deming was there in a White runabout.

It was Commissioner Woodbury's purpose to go at the asphalt somewhat after the fashion in which it is done in London, only he had some Woodbury ideas to introduce. Chief of these was the innovation of squee-gees drawn by horses, with which the asphalt might be scraped and dried after being flushed. As the Commissioner explained, the squee-gee itself, a board with rubber on the edge, such as is used for window cleaning, is as old as a ship's deck, but so far as he knew a squee-gee drawn by horses was original with him. The squee-gees used for the purpose of the experiment were improvised affairs, put together the day before that set for the demonstration. They were simply old snow scrapers with a two-inch flange or lip of rubber projecting from the lower edge of the scraping blade. Sad to relate, they did not work effectually.

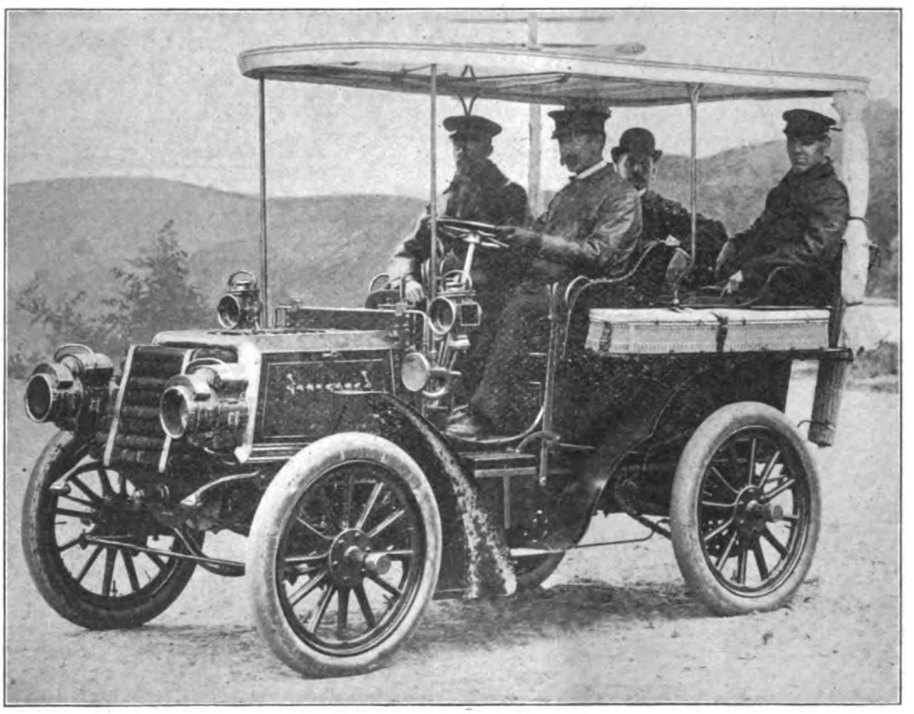
The place chosen for the experiment was the block on Fifth avenue opposite the Waldorf-Astoria, and part of the block below, between Thirty-third and Thirty-second streets. Early as it was, photographers and newspaper men were on hand, and a curious crowd of pedestrians fringed the sidewalks wondering what it all was about. It was plain that something was going on, for there was an unusual number of "white wings" on the two blocks, a section boss, two patent sprinkling carts and three of the two-horse squee-gees. Commissioner Woodbury rolled up in a steam automobile tendered him for the occasion. President Shattuck arrived soon after, and then Paul Deming.

The watering wagons first went to work to show what they could do at flushing the street instead of merely sprinkling it. The new style of carts, of which only a few are in use by the Department, are ingenious contrivances that carry water under an air pressure, so that a spray can be sent out in front, behind or to either side with considerable force. When the spray is sent out from the holes on the side of the vertical distributer that extends downward to within eighteen inches of the ground, the surface dirt and refuse are flushed to the gutter. The strength of the spray may be imagined from the fact that a brick has been carried along for a block and around a corner by the stream of water from one of these carts. The pressure in the carts is obtained in a very simple and economical way. The water barrel on the wagon is air tight and has a compartment forward, where the air is forced and cushioned simply by the entrance of the water from the hydrant. Of course the greater the water pressure the more the air is compressed and the greater the distributing force.

After the water wagons had done their work the squee-gees took the stage for their stunt. Alas, even opposite the Waldorf the asphalt was so wavy and cuppy that the straight edges of the squee-gees could hit only the high spots, and after they had gone along they left two or three streaks each a few inches wide where the pavement had been scraped. As the squee-gees ran along one could see a broad streak of daylight under them. Commissioner Woodbury stepped on the top of one of the scraping blades in order to weight it down and make it touch, but it was no use, and he shook his head mournfully as he got off and climbed into President Shattuck's car. The two automobiles tried manœuvering on the asphalt after the carts had flushed it and the squee-gees had threatened it. The vehicles were tooled along in snaky lines and turned short. When turned short the rear wheels of the little White would slew about almost in a half a circle. The big Panhard skidded some. Neither of them, however, slipped so much as they did when the experimenting party went down to Twenty-first street to try the asphalt where it had been simply sprinkled and made slimy. It was sufficiently demonstrated that the flushing is far better than the sprinkling, and also that the squee-gees are good things if they can be made to fit the uneven surface. The streaks left behind the scrapers where they did touch were dry and gritty. If the whole roadbed could have been fixed like these streaks there would have been perfect traction and no slipping.

It was a poor day for experiments of the kind, because of the low temperature. At 7 a. m. the thermometer was 35 degrees, three points above freezing. As the Commissioner said, it was only three degrees from impossibility. At 32 no washing of the street would be practicable. The water left in the hollows and even on the high spots did not dry as it would on a summer morning.

Enough was done to show that the idea of the Commissioner is a good one when properly worked out. After it was over Commissioner Woodbury remarked to the Motor World man: "Well, we have learned a great deal about the varying conditions of asphalt and how to treat them. There is no radiation this morning to help us or the demonstration would have been much better. We are going to keep at it, though, and we will get the streets cleaned eventually, no matter what we have to do. I think that I will modify the squee-gees by making them wavy like the asphalt. The edges will be escalloped and with two or three in a row on the same machine, having the escallops in counter positions, we ought to be able to hit the holes as well as the bumps. The rubber veils, too, should be longer and more flexible."



Mr. John C King, of Chicago, in his Robinson Car in which he Toured New England. Mr King is in the Rear Seat With his Chauffeur. At the Wheel is J. T. Robinson, President of the Pope-Robinson Co., at his Side is E. W. Pope, Treasurer of the Company.

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TO OUTDO ROME

Colossal Project Which Includes Ten-Mile Automobile Track—Vanderbilt Interested?

A ten-mile track for automobiles is part of the roseate hued scheme for the greatest show of a sportsman's paradise on the face of the earth. Yet this little automobile course is only an incident in the grand scheme for an aggregation of running horse and trotting tracks, golf grounds, cinder paths, baseball diamond, football gridiron, bicycle track and all the rest of it, down to a croquet lawn, that is being plotted for the Hempstead plains on Long Island by H. B. Fullerton of the Long Island Railroad and a few kindred spirits, who will, according to the enthusiast named, be the nucleus of the greatest athletic organization ever known.

The recently incorporated Kings County Automobile Club, it now appears, was only one of the preliminary steps in the whole plan. The project at first flush seems too stupendous to be realized, and yet there is a world of reason in the arguments advanced by those who are behind it. It is pointed out that in a very short time all the horse racing tracks in Greater New York must be sacrificed to the advance of house builders or railroads or the progress in laying out city streets. According to Mr. Fullerton there is assurance of Whitney, Belmont and Vanderbilt money and support in the execution of a plan such as the one indicated. Fullerton says it will be a couple of years before there is any tangible development of the scheme, but the preliminary work is even now going on.

There are miles of waste level lands on the plains about Hempstead, and, after all, a ten-mile circuit would, if circular, be only a trifle more than three miles in diameter, possibly three and a half miles in greatest diameter if an oval.

The greatest objection probably would be that made by the spectators. A revolving grand stand in the centre of the infield should be built to do the thing up properly, and a pair of powerful field glasses given away with every admission ticket.



SIR THOMAS LIPTON, IN AN OLDSMOBILE, AT HIS COUNTRY RESIDENCE, OSIDGE, ENGLAND.

BULB OR REED?

Two Experts Disagree as to the Weak Points of American Horns—Their Contentions.

When experts disagree, offering antipodal explanations for an occurrence, and being equally emphatic in believing that they are correct, it is not an easy matter to decide between them.

"Why is it that practically all the automobile horns are imported?" repeated Charles E. Miller, the well known jobber of this city. "For a very simple reason, viz., that we can't make them as well as the foreigners can.

"The trouble is with the reeds. Try as we may we can't equal the French at making reeds. Theirs last forever, or nearly forever, no matter how much they are used. But ours crack and split and go wrong in every conceivable way. There's no use talking, we can't make reeds, and we might as well give up trying," and he shook his head

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in such a positive way that the Motor World man came to the conclusion that it was a hopeless task.

A short time afterward, however, this view was shaken in consequence of a conversation had with R. H. Welles, of the Badger Brass Co.

"We have given up the manufacture of horns," he said, "because we find it out of the question to compete with the French makers.

"The trouble is all with the rubber bulbs. They won't stand the work they have to do. They crack or burst in a short time and thus become utterly useless. It's queer, too. Just why our rubber manufacturers shouldn't be able to make just as good bulbs as their European rivals is something that I can't understand. But such is the case, for we have tried it over and over again, and always with the same result."

Asked if there was any trouble with the reeds, Welles scouted the idea.

"The reeds are all right," he said. "We have neither trouble to get them here nor cause for complaint against them. No, I tell you it is the bulbs; you may be sure of that."

Whipple and his Packard Parted.

Desolation undoubtedly fills the soul of that prince of good fellows, Harlan W. Whipple. For years the Orange (N. J.) man has been an automobile enthusiast of the most pronounced type. His automobile stable is always large, but even it is insignificant by comparison with the list of cars he has owned at one time or another. And although he may tire of some automobiles he is never happy without a motor vehicle of some sort.

Last week Mr. Whipple sailed, en route for Cuba, where he is interested in some railroad enterprises. With him was to have gone his latest and most beloved automobile —the big, brass-hub Packard that is so well known by all who have even a seeing acquaintance with its owner. But it did not go, and thereby hangs a tale.

In packing up the necessary articles that form part of every traveller's kit, Mr. Whipple concluded that the "Juggarnaut" was too much for him, so the big car was handed over to the tender mercies of others —for, of course, it was to go to Cuba, too.

The "others" were, in this case, an express company, to which was intrusted the task of delivering the car to the steamer in ample time for its sailing. Equally, of course, they cut the time so very fine that the car reached the dock just in time to be too late. It is even said that additional poignancy was added to Mr. Whipple's feelings by witnessing its arrival from the deck, after the lines had been cast loose and the voyage begun.

In making a temporary electrical connection the stranded wires should be twisted up as solid as possible and the loop formed by turning the wire from left to right. When so made the loop closes in under the twisting action of the screw when tightening up the connection. If the loop be made in the opposite direction this same action spreads the wire and a bad connection results.

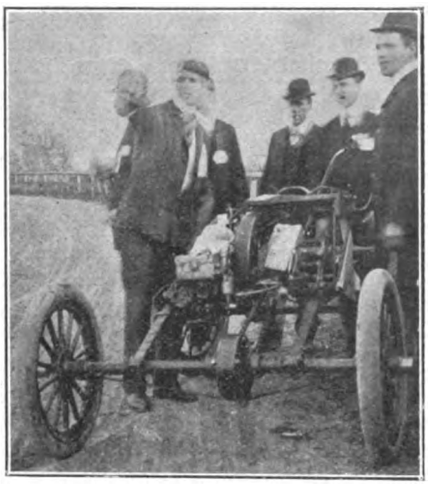
Springfield Banquets and Elects.

Jollity and rare good fellowship marked the annual meeting and election of the Springfield (Mass.) Automobile Club on Wednesday of last week. It was followed by a banquet, the first, it is stated, of monthly ones to be held throughout the winter.

The complete list of officers chosen was as follows: President, H. G. Fiske; first vice-president, Dr. W. R. Weiser, second vice-president, Dr. A. O. Squier; third vice-president, A. P. Smith; fourth vice-president, I. H. Page; secretary, F. A. Hubbard; treasurer, F. S. Carr; directors, Dr. H. C. Medcraft, Dr. H. C. Martin, Harry A. Knox, J. Frank Duryea, Adolph Geisel, S. L. Haynes and W. M. Remington.

The Naked Northern.

Few of the thousands of spectators who watched the Northern car tear around the track and reel off miles at the rate of 1.26, at Detroit a few weeks ago, knew that the vehicle was one of the regulation runabouts stripped for racing. Such was the case,



however. The illustration shows the car in its naked readiness, and the way it ate up space is confirmation of the Northern Mfg. Co.'s claim that its product possesses ample power as well as stamina. At the same meeting this car came into collision with the Winton "Bullet," but neither it nor Operator Maxwell were much hurt, although their escape was little short of miraculous.

Recent Incorporations.

Detroit, Mich.—The Imperial Automobile Co., Ltd., with $250,000 capital, to manufacture electric automobiles. The officers are Dr. J. B. Book, chairman; D. J. Campau, and Homer McGraw, vice-chairmen; R. O. Adams, secretary, and George J. Worthy, treasurer. Joseph Ledwinka, of Pittsburg, and Rudolphus Fuller, of Detroit, are consulting engineers, and the following comprise the advisory board: Hoyt Post, C. M. Burton, S. F. Hodge, W. T. McGraw, J. Fred Williams and A. B. McCord, of Detroit, and Charles Berg, of Chicago. Among others interested are W. D. Simons, D. J. Campau, Homer McGraw, George J. Worthy, R. O. Adams, Ralph L. Aldrich and Rudolphus Fuller, of Detroit.

About Oldsmobiles for 1903.

"The Oldsmobile for 1903?" said F. L. Smith, of the Olds Motor Works, repeating the question put to him. "It will be just as good as the Oldsmobile of 1902" he added.

"A distinctive model or any radical alterations?" again repeating the query. "Not a bit of it. It isn't the Olds policy to tinker with a good thing for the mere sake of making a change or to wait twelve months to make an alteration when the alteration is in the nature of an improvement. We would improve every month in the year were it possible. As it is, we have during the year tuned up our little runabout in several details. We do not hold such things until the end of one year or the approach of a new one. We improve as we go along, irrespective of season. As for radical departures, than ours where is there a carriage that is more eye pleasing or that is giving better service or better satisfaction? Why, then, should we even think of tearing down only to build up again? We have nothing of the sort in contemplation."

Drop Forged Dogs.

Drop forged dogs of all kinds—common dogs, straight and bent tail dogs, clamp dogs with stationary and swivel jaws, the latter for holding taper pieces, die dogs—all are described and illustrated in a new list just issued by the Billings & Spencer Co., Hartford, Conn. These dogs are drop forged of the best steel for the purpose and are fitted with hardened steel screws. They are especially designed for heavy work, and the reputation of the famous Hartford concern is sufficient guarantee of their quality.

Go From St. Louis to Florida.

A tour over roads and through territory rarely visited by automobiles is being made by Mr. and Mrs. John L. French, of St. Louis. They left the latter place last week, en route for Orlando, Fla., where they expect to join friends on a hunting and fishing trip. They will take the trip slowly, stopping at whatever points may interest them. They do not expect to reach thir destination until the middle or last of December. Their intention is to spend the remainder of the winter in Florida.

Fosdick "Goes and Does It."

Rice, wedding cake and cards have played a very prominent part in the doing of Harry A. Fosdick this week. The popular manager of the Winton Boston branch is receiving the congratulations of his friends, his marriage having taken place on Tuesday at Hackensack, N. J. The bride was Miss Lizzie Ballagh. The wedding took place at the home of her parents, at Hackensack, and the happy couple are off on a three weeks' honeymoon.

New One in Washington.

The Washington Motor Car Co. is the style of a new concern at the Capitol, of which D. L. Whitford, formerly of the Mobile Co. of America, is the moving spirit. The agencies for the Northern and Knox have been secured, and business is already doing at the temporary location, 1116 Connecticut avenue.

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EXCHANGE OF OPINIONS

First of A. C. A. Tuesday Night Talks Gives Rise to Discussion of Many Subjects.

It was quite sincere and quite natural that several members of the Automobile Club of America and a couple of visitors should complain of the tediousness of fourteen miles an hour in reliability runs, and should advocate something more in the nature of a race, at the first of the Tuesday night talks, but it was unfortunate that it should go forth in the newspapers, because it gives the motorphobe such an excellent thing to bellow about.

The meeting of last Tuesday night, at the club house, on Fifth avenue, New York, was very well attended. President Shattuck being unavoidably absent, Vice-President W. E. Scarritt occupied the chair. The theme for discussion was the reliability contest to Boston and back, held in October, and some very interesting comment was made. Chairman Scarritt began proceedings by outlining the story of the run and dwelling with praise upon the signal success of it.

Suggestions being asked for, G. F. Chamberlain said he thought that a mistake had been made in not affording the newspaper men opportunity to get fuller and more accurate reports. The consequence of the policy of having observers keep their records secret was, he said, that many garbled accounts crept into the papers. He favored making public the reports of the observers at the noon and night controls. S. T. Davis, Jr., spoke in the same strain, and Chairman Scarritt heartily approved of the sentiment. He said he would advocate that in the next run, the observers be furnished books with carbon sheets, so that a copy of their notes could be posted at the noon and night controls on a bulletin board, for the benefit of the press.

Mr. Davis said he favored doing away with observers, but did not explain why. Percy Owen favored short runs of 150 miles. H. S. Chapin advocated a series of a week of runs of about 100 miles a day, going out from the city in a different direction each day, and returning at night.

E. T. Birdsall started the talk about racing. He said that the reliability of American machines has been sufficiently demonstrated, that no matter what a contest was called the public always centered its interest in the machine that got in first, and believed that it was the best machine. He said that if the vehicles were sent to Boston and back or Chicago and back, without observers and without any "funny business" of controls, it would be the best machine that got back first, not the fastest, but the best. He said it was all wrong to have to crawl on good roads and hurry on poor ones, because those were not touring conditions. Several espoused these sentiments, but Chairman Scarritt snuffed the racing talk by saying that the club stood for obedience to the law, and that present inconvenience must be endured for the sake of future good.

S. T. Davis, Jr., favored classifying machines according to price, instead of weight, because it was the price in which the buying public is most interested.

Captain Barclay H. Warburton, of the Philadelphia Automobile Club, suggested that a long distance race should be held, and the machines handicapped on the basis of their retail prices, the same as is done in selling races for horses. He said he formerly owned thirty-six horses, and that he often drove a coach-and-four along Broad street, Philadelphia, at a gallop, and from the Quaker City to New York at the rate of twenty miles an hour without ever being spoken to by a policeman, but that now, if he ventured to run an automobile at the rate of ten or twelve miles an hour, he quickly heard the policeman's whistle.

General Roy Stone said that the ordinance permitting the laying of experimntal bits of steel road in New York City had become a law that day, Tuesday, and that a steel track for trucks would be laid in Murray street, from Broadway to Church street, within a few days.

W. J. Stewart told of the thousand miles of good roads there are in the nearby counties of New Jersey, but which are little used by New Yorkers because of these being no good road from Jersey City to Newark. He asked if a steel road could not be laid across the meadows to Newark, and if the A. C. A. would not co-operate with the Automobile Club of New Jersey in having one built. General Stone suggested that probably a right of way for a private road could be obtained across the meadows, so that an exclusive automobile speedway might be built. This idea found favor, and Chairman Scarritt said that he would lay the matter before the governors of the A. C. A.

Hill Climb on Thanksgiving.

There has been much talk of hill climbing contests, but until this week, when the New Jersey Automobile Club announced that it would father such an event, nothing came of it all. Thanksgiving Day, November 27, is the date selected, and Eagle Rock hill, a few miles from Newark, N. J., will be the scene of the contest.

It is proposed to divide the contestants into two classes—for gasolene and steam vehicles, respectively. President W. E. Scarritt of the club thinks such a division would add materially to the interest of the event.

Eagle Rock hill is located in that region of good roads, the Oranges, and is about one mile long. The grade is very even for the greater part of the way, but near the end there is a turn, followed by the steepest rise, which extends to the top, a distance of several hundred feet. The gradient ranges between 14 and 17 per cent. A smooth, hard macadam surface is conducive to good time, if sufficient power is available.

CASE LAYS DOWN LAW

His Charge in Marble Matter Defines Some Points Regarding Usage of Public Roads.

Both in his charge to the jury and in pronouncing sentence in the case of Herbert A. Marble, who was convicted of manslaughter at New Haven, Conn., last week, Judge Case discussed the privileges and responsibilities of automobilists.

He pointed out that the highways are for the convenience of others, and one class must respect the equal rights of other classes. Each must consult the safety and convenience of the others, acting within the rights of their class. He also pointed out that the running of an automobile in the daytime was a very different thing from running it on a dark foggy night, and the same rules of precaution would not apply in both cases. Moreover, the ignorance of the presence of others would form no excuse, as the driver must be prepared for an emergency and must keep his machine under control. Lastly, the doctrine of contributory negligence does not apply in a criminal case as it does in a civil suit.

Judge Case then went on at some length regarding the use of automobiles on the highways. He said that the automobile was a machine which, in the hands of responsible and careful persons, was safe, but in the hands of the reckless was a dangerous machine. Unfortunately, he stated, there are too many persons who own or control these machines who use them with an utter disregard for the rights and safety of others, and they will continue to do so unless the courts show that they will uphold the rights of the people.

"It is unfortunate that there is an increasingly large class of people who measure their caution by their convenience in managing these machines, and they will continue to presume unduly on the rights of others unless the courts indicate their disapproval," said the judge in conclusion.

Foxhall Keene a Victim.

Near Oyster Bay, L. I., on Tuesday, Foxhall P. Keene was arrested, charged with illegal speeding. Instead of tamely submitting to be mulcted, he announced that he would fight the case. His car, he said, had been so geared that it was impossible to get a speed exceeding twenty miles an hour out of it.

The arrest was but one of many made at the instance of a self-appointed organization which arrogates to itself the duty of prosecuting violators of the Cocks law provided they wer automobilists.

A determined stand made by a man like Keene should shed a flood of light upon its practices.

It is an unusually sagacious child that knows enough not to smile when its father attempts to explain just how and why a motor motes or why it fails to.

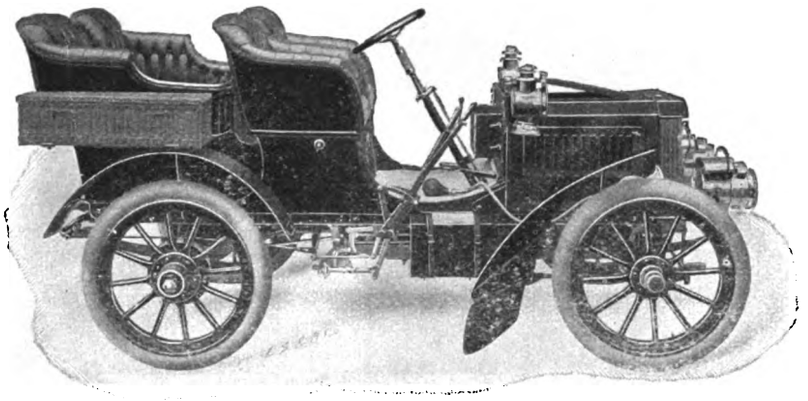
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POINTS OF THE PEERLESS

Convertible at Will to Racer or Touring Car and Contains Many Features of Merit.

When at the last show in Madison Square Garden the Peerless Motor Car Co.—then the Peerless Mfg. Co.—Cleveland, O., brought out its smart looking foreign type of cars, it was seen that a great deal of thought had been given to the matter, and that no small amount of skill had been brought to bear on the problems confronting the American manufacturer who takes such a course. The cars were exceedingly creditable productions. When the time came for them to receive their baptism of fire—the test of actual and extended use on the road—it was found that they did not belie their looks.

Since then the concern has been spurred on to more ambitious attempts. Last August a racing Peerless car made its bow at the races at Brighton Beach, this city, and



performed splendidly. At subsequent meets it clinched the matter by continuing to show up in excellent shape.

It is pretty well known that this racing car is to be the piece de resistance of the Peerless company's offerings for 1903. With such changes as are necessary to transform a racing car into a roadster, this vehicle will be duplicated and termed the Peerless touring car. The substitution of 28-inch for 32-inch wheels, and a tonneau body for the skeleton form then used, practically effects the change.

Except that the usual pipe coils with radiating disks appear in its front, the bonnet resembles the well known Mercedes bonnet, being square in shape. It incloses a two cylinder vertical motor, the two being cast together, as are the cylinders and cylinder heads. These cylinders are 4½-inch bore by 5½-inch stroke. Both pistons work on one elongated crankpin, it being considered that the vibration thus caused is less objectionable than that due to the irregular impulses necessary with opposite cranks, and the cranks are carefully balanced to reduce vibration as much as possible. A float feed vaporizer of modern design is used.

A centrifugal ball governor is carried on the forward end of the two to one shaft. It acts on a lever, the upper end of which connects with a throttle valve in the inlet valve casing. A rod connection from the same lever is worked by a small accelerator pedal under the operator's right foot. As the governor balls expand this pedal rises, and by pressing it down the throttle valve is held open against the action of a governor. When the foot is removed from the pedal, as to apply the brake, the governor again acts on the throttle.

The main frame is bent up in two halves of two-inch channel steel, each half forming a side sill and a half of the end sills. The two halves thus formed are joined at front and back by fish plates. But one intermediate cross sill is used, this being under the driver's seat, between the speed gear box and the muffler. It is bent downward, somewhat in an M shape. The front ends of these angle irons are bent up just forward of the motor to meet the front cross sill of the main frame.

The motor and speed gear box are supported on the false frame in the usual manner. The "pump handles" carrying the front ends of the front sprongs are riveted into the channel by side sills, instead of being made with an L shaped base, as in the French machines. The rear springs are liberally proportioned for easy riding, and will compress about four inches from their shape when fully loaded. The front springs, which can compress about three inches, are provided with rubber buffers to protect them from abnormal shocks.

A centrifugal pump is used in the new as in the former models, but it is gear driven instead of by friction, as before. The arrangement of the water tank and cooling coils is unique. The tank, which is wholly placed in front of the motor bonnet, is divided into upper and lower portions. These are connected by vertical radiating tubes, and the upper tank, into which the water is discharged from the engine jacket, has a steam outlet passing down below.

The zigzag radial tubes are patterned after the latest Panhard type, and consist of a number of very small tubes laid side by side horizontally, with the radiator flanges deep enough to include the whole set of tubes. There is no direct connection between the tank and these tubes, but the water from the pump passes to the upper ends of these tubes, thence dividing itself in multiple between them and going zigzag to the bottom, whence it passes to the engine jacket. The pump draws its water from the lower tank to which it is connected by a short downwardly sloping pipe, preventing any possible formation of steam in the pump.

The engine is lubricated principally by a multiple pressure lubricator, which feeds oil to the cylinders and crankpins. The end bearings of the crank shaft have oil pockets and ring oilers, and require only occasional refilling. The shaft bearings of the gear case, which, like the engine crank case, is of aluminum, are oiled in the same way, there being an entire separation between shaft lubrication and the oil in the gear box itself.

The gasolene tank under the seat is made to hold nine to twelve gallons, at the option of the purchaser. About five and one-half gallons of water are carried. The touring machine is geared to run thirty miles an hour at 900 revolutions per minute of the engine, at which speed the engine is rated to give 16 horsepower. This, of course, is without acceleration.

Ignition is by jump spark, with Splitdorf coils and De Dion dry batteries.

Why he Likes Renting.

"Does renting pay, and is there much of it?" repeated W. H. Webster, of the Webster Automobile Co. "I should say so. Any one who bids for it can in a little while get all he can handle and at paying prices.

"We have been at it only a short time, but have built up a good trade," he went on. "In fact, it was owing to it that we took on our new place at No. 346 West Fifty-third street. We hadn't room to handle a renting business here, so were obliged to hire a place where we could.

"We charge $3 for the first hour and $2 an hour thereafter. This is with a chauffeur, of course. No, we never hire a rig without our man to run it; wouldn't do it at any price, no matter how experienced or expert the hirer might be—or claim to be. No chauffeur no rig, is our motto, and it is a good one. We would not deviate from this practice unless we had deposited with us the full value of the carriage.

"Where do people go? Oh, to the Park or around town to make calls or to do shopping. It's quite a novelty to do this in an automobile, and therefore we have plenty of applicants.

"We have had a man pay us as high as $16 in a day for hire. Such amounts as $6 and $8 are not at all unusual. You see, when it is borne in mind that two or even three passengers besides the chauffeur can be carried in one of our Prescott rigs, which we use for this purpose, and that a great deal of ground is covered, the charge is not really high."

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THE AUTOPHOBE ASSOCIATION

The Working Plan and the Men Behind the Long Island "Crusade" Finally Revealed.

The Motor World has at last discovered the personnel of the organization behind the prosecution of automobilists in Nassau County, Long Island—the people responsible for the measured road, the tin can and sleigh bell signals and the corn fodder constables with stop watches hiding in the woods. The select gentlemen responsible for these tactics compose the Long Island Highway Protective Society, under which name all forms of motorphobia on Long Island may henceforth be known.

This organization is by no means new, but it is not generally known, because it is select and has been chary about revealing itself to any except those who were reasonably sure to be in sympathy with the hide-in-the-woods-and-grab 'em plan.

The Long Island Highway Protective Society has been in existence since last summer. It was incorporated in September. It has been busy catching the class of criminals who use automobiles ever since it was formed, but thus far it has not caught any one driving a horse faster than eight miles an hour, although the declared purposes of the society is to prevent illegal speeding by reinsmen as well as chauffeurs. That is, it declares that object in the preamble of its constitution, and also in the first part of a circular letter which is being sent to Long Islanders suspected of motorphobia, but in the second paragraph the writer of the circular comes out with quite charming naivete and says that after all it is really the automobile that the society has it in for. This is the way the circular reads:

"The Long Island Highway Protective Society has just filed articles of incorporation, and entered on an important work indicated in its name. In plain English, it intends to organize the dwellers on Long Island for the purpose of securing greater safety to all who use its highways and wage war on all who usurp the public's rights and privileges thereon by rendering the highways dangerous through the reckless driving of machines or teams.

"One of the avowed objects of the society, as set forth in its articles of incorporation, is 'to support and co-operate with the public authorities in the enforcement of the law and statutes governing the use and operation of motor vehicles and riding and driving.' Stripped of its legal phrases, this means that the society intends to keep a guardian eye on the rights of the general public to Long Island's highways as against their lawless and reckless use by automobilists.

"Since the use of high power automobiles became so general, Long Island has become the Mecca of the 'scorchers,' and the craze for speed on the part of many thoughtless owners of machines has grown into so serious a menace to pedestrians and horsemen that many experienced drivers no longer frequent the macadamized highways, and in many localities driving by women has been practically abandoned. This society is accordingly organized to abate the nuisance, but not to wage an indiscriminate warfare on automobiles. Its incorporators believe that a majority of those who have these machines will sympathize with them, and they expect that many of them will become members of the society. But the offenders, who behave as if they held private ownership of the roads, who speed recklessly, who drive madly through village streets and around corners, who respect none of the rights of pedestrians or horsemen, will no longer be tolerated. War is to be waged against all such offenders.

"The nucleus of the society has been in existence for some weeks, and in Nassau County particularly has most effective work already been done. Here courses have been measured on the principal thoroughfares. Wardens charged with the detection of offenders have been appointed, and attorneys whose business it is to prosecute violators of the law have been retained. The cost of this work is not paid out of the fund raised through membership fees, but by the several branch divisions within the society, each within its own locality. The membership fund will be used for the general purposes of the society only.

"The headquarters of the society are at Oyster Bay, and those who entered on the work at first expected to confine their energies to Nassau County. But when so great an interest was shown, and when the conditions in Queens and Suffolk counties were found to be similar to those in Nassau, it was decided that the scope of the society should be extended over the entire island. Membership is based on the single condition of interest in protecting the highways for the public. The incorporators extend an invitation to all who can subscribe to that condition to join with them. The annual membership fee is $5. Committees which have been formed in villages for purposes similar to those of the society also cordially are invited to co-operate with it."

The work of taking in motorphobes at $5 a head goes merrily on, and the constables get a "rake off" on every arrest they make.

Meantime it is just as well for automobilists to know the distinguished gentlemen who are behaving in such an enlightened and manly way to have the law enforced especially against automobiles as a class. Here they are:

Incorporators—William F. Sheehan, Walter Jennings, William H. Baldwin, jr., Albert W. Seaman, Irving Cox, C. W. Wetmore, Charles A. Post, L. J. Busby, Townsend Scudder, Edward T. Cushing, John H. J. Stewart, Vincent P. Travers, W. Emlen Roosevelt, Arthur D. Weekes, W. J. Matheson, Francis K. Thayer, John W. Weed, Robert W. Gibson, Franklin B. Lord, C. W. Rodman, jr., Charles G. Peters, T. S. Young, jr., and A. P. Montant.

Officers—Charles W. Wetmore, president; Robert W. De Forest, vice-president; W. Emlen Roosevelt, treasurer, and Townsend Scudder, secretary.

Directors for the first year—R. W. Gibson, William F. Sheehan, William J. Matheson, Thomas S. Young, jr., George R. Sheldon, William H. Baldwin, jr., W. Emlen Roosevelt, William J. Youngs, Arthur D. Weekes and C. W. Wetmore. Former Representative Townsend Scudder is the society's counsel.

A French Innovation.



A GASOLENE-DRIVEN TROLLEY REPAIR WAGON

Feared It Would Explode.

There was one thing about the freak steam racer, "The Tug," which made its appearance at the Detroit races, that puzzled observers. This was the vagaries of its steam gauge. It registered a most wonderful, nay, an alarming, pressure, frequently getting up as high as 2,000 pounds.

A group of tradesmen were looking at the queer car as it was standing between races. Among them was Fred Mott, of the Weston-Mott Company, who was examining the engine intently. Suddenly his eye fell on the steam gauge. It indicated 2,000 pounds. Mott made one bound away from it, and then ran as fast as his legs could carry him. "And the funny part of it was that it did not explode," he confided to the Motor World man, when he had recovered from the shock.

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Short Circuits

The Massachusetts Automobile Club will begin its series of smokers this month.

John P. Drake has been appointed manager of the Empire Automobile Storage Co., New York.

An automobile storage warehouse has been opened at 248 West Fiftieth street, New York, by C. F. Keulebler.

The agency for the Baker electric vehicles has been given to the American Automobile Storage Co., West Thirty-eighth street, this city.

An addition to the ranks of Western manufacturers is the Muncie Wheel & Jobbing Co., Muncie, Ind., who are at work on a gasolene automobile.

James A. Turnbull, a Springfield (Mass.) automobile dealer, last weeek filed a bankruptcy petition. His debts amount to $2,538 09; assets, $1,600.

So much improved is the condition of A. C. Bostwick, the well known racing and club man, that he is expected to be out of Dr. Bull's private hospital in a short time.

By agreement between counsel, George S. Taft, of Worcester, Mass., has been appointed auditor in the case of John C. Speirs versus the Locomobile Company of America.

Panhard & Levassor, the famous French makers, are reliably reported to have orders amounting to $482,500 booked for 1904 delivery. They are already "sold up" for 1903.

Flushed with his successful attack on the existing record, Henry Fournier is now eager to race W. K. Vanderbilt, Jr., for the "championship of the two great Republics."

Rudyard Kipling is one of the latest to enroll himself in Great Britain's Volunteer Automobile Corps, which now numbers 130 members. They constitute a sort of automobile militia.

Contracts have been let for the conversion of an old church property at Newtonville, Mass., into a modern garage, to be occupied when completed by F. J. Read. Room to store seventy-five cars will be provided.

The first hill-climbing competition of the Auto Club of Switzerland took place last month, between Trelex and St. Cergues. The distance was ten kilometres, and good times were obtained in the speed section, which, however, was poorly represented. Perrot, on a Rochet-Schneider, won the light cars class; and Mauthen, on a Mercèdès, the heavy cars class in 25 minutes.

Although not generally known, the famous Mercedes car takes its title from a woman, Miss Mercedes Jellinec. She is a daughter of M. Jellinec, a director of the Cannstadt firm, who was largely concerned in the design of the car.

The store on 38th street, just west of Broadway, this city, formerly occupied by the American Electric Vehicle Co., is now tenanted by Homan & Schultz. The latter are making a strong push on the Northern gasolene runabout.

One of the oldest livery stables in Providence, R. I., is to be torn down and an automobile station erected in its place. It will, when completed, be occupied by the Providence branch of the American Cycle Mfg. Co.

Saturday, December 6, is the date set for the opening "smoke talk" of the Rhode Island Automobile Club. Meetings will be held throughout the winter season at the club's headquarters, in the Crown Hotel, Providence.

After giving a number of the aldermen a demonstration of the harmlessness of the motor vehicle, the Kansas City (Mo.) Automobile Club last week took part in a hearing to consider the ordinance now before the municipal bodies.

Negotiations are pending between citizens of Waterloo, Iowa, and Charles E. Duryea, of Reading, Penn., looking to the establishment of an automobile factory in the former place. Visits have been exchanged, but nothing definite has yet been done.

The Philadelphia postal authorities are experimenting with an automobile wagon on the route between the main office and Darby, a suburb about six miles out. Formerly trolley cars did the work, but the automobile is said to have covered the distance in much faster time.

There will be the customary banquet of the National Association of Automobile Manufacturers during the automobile show at Madison Square Garden in January. The entertainment committee consists of P. H. Deming, Percy Owen, H. W. Leonard, O. J. Woodard and J. Gibbs.

Chicago chauffeurs are reported to be about to form a union, with a view of securing shorter hours and less work. They will refuse to wash wagons, but will consent to pilot them and generally supervise all necessary repairs. For working more than eight hours a day they will demand extra pay.

The colony of automobile storage houses in this city is being constantly added to. One of the latest entrants into the field is the Metropolitan Motor Car Co., which has leased part of a four story bulding on East 57th street, and will take possession on December 1. Harry Doty will be in charge.

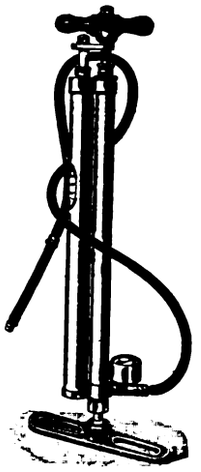
One stage of advancement has been reached by the automobile ordinance now before the Pittsburg, Pa., councils. Select Council passed the bill last week. It provides a maximum speed of seven miles down town, ten miles on most of the other streets, and fifteen miles on the outlying boulevards.

There are limits to credulity, it seems, for the story of Elisha Caddick, who was found lying injured on a road near Meriden, Conn., last week, that he had been run over by an automobile was viewed with suspicion. Now it turns out that two boys saw him fall from a bridge. And so sympathy is denied him.

"To get rid of a generally mispronounced foreign term, why could not the word 'runner' be used instead of 'chauffeur' for the driver of an automobile?" suggests an automobilist. "'Runner' is in use in some parts of the West for 'engine driver' or 'engineer'; it might be applied with equal suitability to the person running an automobile."

Inflates in Three Strokes.

Of pumps that should appeal to automobilists, that shown by the accompanying illustration, and for which Alex. Schwalbach, 473 Flatbush avenue, Brooklyn, N. Y., is sole American agent, appears to have particularly strong claims. It goes a step beyond the double-action pump, and, as its name implies, is a compound article. It has two cylinders or barrels, one an inch and a



quarter in diameter and the other two inches. Both barrels are nineteen inches long and the total length of the pump, including a double handle and a double foot rest, is twenty-three inches.

On the up stroke air is compressed from the larger cylinder into the smaller and the down stroke forces this compressed air from the smaller barrel into the tire, where it expands. One who has tried it says that an entirely flat tire can be inflated with three strokes. The pump is an English invention, but one fully covered by American patents.

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NEW OIL MOTOR

With Impluse Every Revolution, Suggested by British Authority—Present Types Reviewed.

Before the British Institute of Mechanical Engineers, held a short time ago, Captain C. C. Longbridge, a member of that body and everywhere recognized as an authority on subjects connected with the modern motor car, read a paper entitled "Oil Motor Cars of 1902," extracts from which are appended.

As will be seen, Captain Longridge has reached the conclusion that the times are ripe for the introduction of a new oil motor. He bases this conclusion on the imperfections of the present types. Since the days of Daimler and other early inventors, he says, no great novelties have appeared, and very little real advance has been made. A motor in which an impulse takes place at every revolution is the ideal one, he thinks. With the Briton's general conclusions—that is, that a new motor is needed and will come—American workers in the field, notably Charles E. Duryea, concur, as is well known.

"With very few exceptions, petrol car engines are of the vertical single acting Otto type. Variations are made consisting chiefly of horizontal Ottos, or, more often, horizontal motors, in which one cylinder contains two pistons, between which explosion takes place, such as the Koch, Gobron-Brillié, Prétot, Hyler-White, Lucas and a number of others," he begins.

"There are two prevailing positions and two classes of engines. As regards position, the vertical is far the more common. From the standpoint of the automobile engineer the case stands thus: Advocates of vertical fixing assert better accessibility and adaptation to the usual method of drive; those of the horizontal claim less vibration (the impulse being at right angles to the spring system of the vehicle), lower centre of gravity, easier lubrication and room for a longer stroke—a requirement for the use of alcohol and heavy oils. They might also appeal to the almost universal practice of gas and oil engine makers. Between the types of engines the comparison stands thus: Simplicity, and probably economy, lie with the single acting Otto; a greater smoothness of running with the one cylinder two piston type. From the persistency and extension of its use it is clear that manufacturers consider this latter advantage to more than compensate for increased complication, which, after all, in these small motors, is not so great.

"The author himself holds that neither type is going to stay. The ultimate evolution will be the impulse every revolution engine. The aim of manufacturers is obviously toward elimination of change speed gear by increasing the flexibility or elasticity of the motor. The car explosion motor has to be more and more assimilated to the character of the steam engine. To this assimilation there is only one successfulroad. To obtain steady running from the highest to the lowest speed the impulse must be multiplied; and as thet number of cylinders is limited—the fewer the better—recourse must be had to the impulse revolution motor. In this belief, the author has recently patented an engine in which impulse in every cylinder is obtained at every revolution. The cycle is exceedingly simple, and, as high compression is used, efficiency and economy should result. The motor consists of two, or multiple of two, side by side cylinders, closed at both ends. The rear end forms the compplace; the front end is an air receiver. The front nd or air chamber of each cylinder is connected by a pipe or passage to the rear pression chamber, in which explosion takes end or compression chamber of thet other cylinder. This tube or passage is provided at both ends with valves, and serves to transfer air from the air chamber of the one cylinder to the compression chamber of the other. The compression chambers are provided with ample exhaust valves, and the air chambers are fitted with automatic inlet valves. All other valves are mechanically operated. The oil, atomized by a small compressed air jet, is fed, under control of the governor, into the combustion chamber, at the end of the compression stroke.

"The action is as follows: Assume the piston in No. 1 cylinder to be at the end of its compression stroke, and that in No. 2 cylinder at the end of its working stroke. The front of No. 1 cylinder is full of air; the rear of No. 2 cylinder is full of burnt gases. The compressed charge in No. 1 is now carburetted and fired, the piston advances, compressing the air in front; the piston in No. 2 retreats, expelling the waste gases. At about half stroke the exhaust valve in No. 2 is closed and simultaneously the inlet valves (one at either end of the inlet tube) are opened, and the full charge of air, already under compression, is pumped from the front of No. 1 cylinder into the compression chamber of No. 2. On the completion of the No. 2 cylinder compression stroke atomized oil is injected (the Diesel engine illustrates the method) and is fired; at starting, by the electric spark, and afterward, perhaps, by hot surface contact ignition, oil injection can be effected at once or gradually, as desired.

"The advantages claimed are:

"1. Impulse every revolution in each cylinder without extraneous pumps.

"2. Very perfect cushioning and easy running.

"3. Very high compression, with diluted charge, and, therefore, economy.

"4. Absolute immunity from premature ignition—a factor that militates against high compression in other engines.

"5. High charge temperature of the charge, without corresponding rarefaction; therefore very favorable conditions for easy ignition rapid inammation anad high power.

"6 A method of oil injection that admits of the engine being run as an explosion at constant volume engine, or a combustion at constant pressure engine

"7. Equal adaptability to petrol or heavier oils.

"Nearly two years ago, recognizing the possibly even beneficial effect of the presence of exhaust gas, and the great value of maintaining the compression, the author strongly recommended a motor company with which he has some connection to adopt governing on the exhaust (i. e., reducing the volume of fresh charge by retaining a portion of the exhaust), in preference to volume throttling. Mr. Frederick Grover, in 1894-'95, conducted experiments which bear out the views held by the author. The general results 'show that the presence of the products of combustion in certain mixtures actually raises rather than diminishes the maximum pressure obtained.'

"1. That the highest pressures are obtained when the volume of air is only slightly in excess of the amount required for complete combustion.

"2. That higher pressures are recorded when residual gases take the place of an excess of air.

"3. That when the volume of the products of combustion does not exceed 58 per cent of the mixture, then it is explosive, provided that the volume of air is not less than 5.5 times the volume of coal gas.

"4. That the time of an explosion is much reduced when excess of air is replaced by products of combustion.

"Whether these observed facts are due to increased temperature or to some chemical action is a point open to argument.

"Reduction in fuel consumption is the great advantage of increased compression, or, to state it otherwise, in any gixen mixture, the explosion pressure produced by ignition is proportional to the charge compression. In practice there are, of course, limits to the degrees to which the charge can be usefully compressed. These limits are fixed mainly by four conditions: First, the difficulty of keeping piston and valves tight; second, the necessity of seeing that the negative work and the increased friction due to high compression do not exceed the greater efficiency obtained (the ratio of incrase in efficiency decreasing as the pressure is increased); third, the desirability of avoiding the excessive shock of a rich charge fired under high compression; fourth, the risk of premature ignition in a highly compressed charge.

"In the matter of piston speed this year's engines show a general return to the earlier speeds given by 700 to 800 revolutions per minute normal running. This gives less wear and tear on the motor, gear and firing accessories, and less difficulty in filling the cylinder; while reserve power by acceleration is held in hand. In respect to slow, yet steady action, the impulse every revolution motor would possess a decided superiority.

"On the whole, the author sees no great novelty either in the types of engine, and very little real advance since the days of Daimler or early inventors. There is undoubtedly room for a new engine, and a ready market for a good one."

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MUST WEAR BADGES

Pennsylvania's Capital City Drafts Law That Piles More Agony on Automobilists.

Determined, apparently, to be in the fashion, the Common Council of Harrisburg, Pa., has under consideration an automobile ordinance which has for its principal feature a licensing scheme.

It provides that all operators of "automobiles, autocars, or other similar vehicles," shall be licensed by a specially constituted body, consisting of the Highway Commissioner, the City Electrician and the Chief Engineer of the Water Department, termed the "Board of Examiners of Operators of Automobiles." It is required of the operators that they wear a metal badge, containing their number, pinned to their coats in a conspicuous position.

Aside from this the ordinance is oppressive unnecessarily so. It prescribes a maximum speed of seven miles an hour, with four at crossings, and makes it compulsory to fit two brakes, of sufficient power to stop a car in ten feet when going at the maximum speed. Altogether, the measure is a most aggravating one.

Its provisions are as follows:

An ordinance to regulate and license the running and operating of automobiles and motor vehicles, whether the motive power be electricity, steam, compressed air, naphtha, gasolene, kerosene, or any source of energy other than human or animal power.

Section 1. Be it ordained by the select and common councils of the city of Harrisburg, and it is hereby ordained by authority of the same, That hereafter no automobile, auto car or other similar vehicle shall be propelled or driven upon or along any street, alley or other public highway in the city of Harrisburg unless the person in charge or control of such vehicle, and who is acting as the operator thereof, shall be a person duly licensed by the city of Harrisburg to act as an operator of such vehicles, in the manner hereinafter provided; aand for the purposes of this ordinance the terms or names "automobile," "auto car," anad other similar vehicles wherever and whenever used in this ordinance shall be held to embrace and mean, and are hereby defined to mean, any vehicle driven or propelled upon or along the streets, alleys or other public places of the city, whether for purposes of business or pleasure, or for both, the motive power of which is electricity, compressed air, naphtha, gasolene, kerosene or any source of energy other than human or animal power; Provided, however, That nothing herein shall apply to the operation of any locomotive, motor or trolley car used by any steam or street railway upon any track or tracks owned or authoritatively used by any steam or street railway company or corporation.

Sec. 2. That the Highway Commissioner, the City Electrician and the Chief Engineer of the Water Department shall be, and they are hereby constituted, a Board of Examiners, who shall be officially known and described as the "Board of Examiners of Operators of Automobiles"; and it shall be the duty of such Board of Examiners to examine into the qualifications, ability and capacity of any person or persons who may desire to obtain a license or certificate of qualification to operate any such automobile, auto car or other similar vehicle. The said Board of Examiners shall have power and authority, and it is hereby made its duty, to examine into the qualifications and fitness of any applicant for a license or certificate of qualification to act as an operator under the provisions of this ordinance; and to carry out the purposes of this ordinance the said board may make such rules and regulations as may be deemed by it expedient or necessary for the purpose of determining the fitness of any applicant for a license or certificate of qualification; and the said Board of Examiners shall hold examinations as often as may be deemed necessary, in the office of the Commissioner of Highways, and such examinations shall be conducted with a view to ascertaining the physical ability, mental qualifications and possession by the applicant of a sufficient amount of mechanical knowledge and ability to understand the working parts or mechanism of the apparatus used for propelling or driving any such automobile, auto car or other similar vehicle.

Sec. 3. Every application for a license or certificate of qualification hereunder shall be made to the said Board of Examiners, and shall set forth the name, age, citizenship and occupation of such applicant. Any applicant who shall have been examined by the said Board of Examiners and deemed by it capable of acting as an operator as herein provided, shall have issued to him or her a certificate of qualification or license authorizing the person so examined and found capable to act as an "automobile operator," and each such license or certificate so issued shall expire upon the first Monday of April next after the date of issue. The said licensed operator shall also be furnished with a metal badge having a number thereon corresponding to the number on the certificate given. Said badge shall be provided with a pin or other fastening and shall be worn by such licensed operator in a conspicuous place on the outside of the coat so that it may not be hidden either by accident or design.

Sec. 4. The fee for such license or certificate of qualification shall be $2 for the first year or part thereof, and upon the expiration of any such certificate or license the holder thereof shall be entitled to a renewal of such certificate or license each year thereafter, without further examination, upon the payment of a fee of $1 for each such renewal.

Sec. 5. Every license or certificate of qualification issued by the said Board of Examiners shall be signed by all or a majority of said board, and may be revoked upon finding that the person holding any such license or certificate has proved unfit to act as an operator, either by reason of carelessness, intemperance or any other cause deemed sufficient by the said board to require a revocation of the same; Provided, however, That no person shall have his or her certificate or license permanently revoked without first being given an opportunity to be heard by the said Board of Examiners in his or her defence. Such revocation may be made for a limited period or permanently as the said board may determine, and in case of the revocation of any such license or certificate the fee paid therefor shall be forfeited to the city.

Sec. 6. The Board of Examiners herein provided for shall cause to be kept a full and correct record of its official proceedings, including the names of the members of the said board, the name, age and residence of each applicant for a license or certificate, the number of certificates issued or rejected, the number of certificates renewed or revoked, and the cause of such revocation, together with the name of the person whose license or certificate was revoked; also, the amount of money received for licenses, and shall cause a full report of said license fees to be made each month to the City Controller, and settlement of said fees made in accordance therewith with the City Treasurer.

Sec. 7. No automobile, auto car or other similar vehicle shall be propelled or driven upon or along any street, alley or public pace in the city of Harrisburg at a speed exceeding seven miles per hour, and at a speed not exceeding four miles per hour when turning corners or crossing any highway within the city, and each vehicle when in motion must be kept to the right, and shall observe the rule of the road as laid down for all other vehicles.

Sec. 8. Each and every automobile, auto car or other similar vehicle driven or propelled upon or along any street, alley or public way in the city of Harrisburg, shall be equipped and applied with an alarm bell or gong of not less than four inches in diameter, and the same shall be sounded at street crossings and whenever else deemed advisable by the operator of such vehicle to be sounded for the purpose of notifying pedestrians or others of the approach of such vehicle. Each automobile, auto car or other similar vehicle shall be equipped with at least two brakes or sets of brakes, one of which brakes or sets of brakes shall be independent of the driving gear of such vehicle. Either of said brakes or sets of brakes shall be of sufficient power when applied to bring any such vehicle, at a speed of seven miles per hour, to a full stop within ten feet from the point such vehicle was when such brake was applied; and all such vehicles shall carry a lighted lamp or lamps in a conspicuous position on such vehicle whenever in motion on any street, alley or public way, at any time after dusk and before dawn. No part of the machinery of any automobile, auto car or other similar vehicle shall be left running while such vehicle is standing in any street, alley or public way without an attendant.

Sec. 9. No person shall operate, drive or propel any automobile, auto car or other similar vehicle upon or along any street, alley or other public way in the city of Harrisburg without having first obtained a certificate of qualification so to do and a proper badge therefor as hereinafter provided; and any person violating any of the provisions of this ordinance shall, upon conviction thereof, be fined not less than $5, nor more than $25 for each offence; and in default of the payment thereof shall be imprisoned in the jail of Dauphin County for a period not exceeding thirty (30) days.

Sec. 10. All ordinances or parts of ordinances inconsistent herewith be and the same are hereby repealed.

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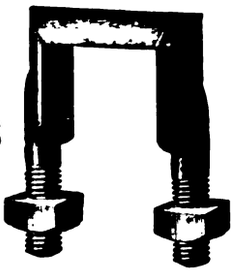
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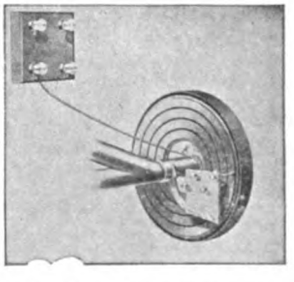
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The Week's Patents.

712,196. Motor Vehicle. William J. Lane Filed March 8, 1902. Serial No. 97,355. (No model.)

and George Lane, Poughkeepsie, N. Y.

Claim.—1. In a motor vehicle, the combination with a vehicle body, a motor supported on said body, a steering axle fixed to the body, a driving axle longitudinally adjustable relative to the body, a power transmission means between the motor and the driving axle and an extensible reach interposed between the axles for altering the distance between them.

712,329. Engine for Motor Vehicles. Charles R. Pflaging, Baltimore, Md., assignor of one-half to Orlando L. Gooden, Baltimore, Md. Filed Aug. 4, 1902. Serial No. 118,226. (No model.)

Claim.—1. In a steam engine of the type described, the combination with the cylinders, the crank shaft, and the driving connections as described, of a shaft projecting at right angles to and driven by the crank shaft; a sleeve keyed on the outer end of said shaft and adapted to be moved a limited distance longitudinally thereon, said sleeve having a gear wheel on each end thereof, a pinion mounted upon a shaft and always in mesh with one of said gear wheels; and means to move the sleeve longitudinally on the said shaft.

712,484. Metal wheel. William P. Bettendorf, Davenport, Iowa. Filed October 22, 1900. Renewed July 25, 1902. Serial No. 116,886. (No model.)

Claim.—1. In a metal wheel, a hub having two annular metal plates the radially disposed portions of which are clamped together and have sockets formed between their meeting faces, in combination with metal spokes the inner end portions of which between their inner extremities and the part thereof outside of said sockets, have lateral projections, which, when said plates are clamped together extend through the wall of the sockets.

712,542. Carburetter for explosive engines. Thomas B. Jeffrey, Chicago, Ill. Filed October 29, 1900. Serial No. 34,798. (No model.)

Claim.—1. In a carburetter, a chamber containing the carburetting liquids; a capillary web or screen, and suitable supports therefor; a rotary shaft by which the screen is given movement into and out of the liquid; a ratchet rigid with such shaft; a pneumatic motor, and a pawl connected with its moving elements and engaging with a ratchet; and a source of pneumatic pulsation communicating with the motor.

712,546. Motor vehicle. Oliver W. Kelly, Springfield, Ohio. Filed May 31, 1902. Serial No. 109,673. (No model.)

Claim.—1. The combination with a carrying platform and the axles of a vehicle, of supports for said platform consisting of transverse frames having slotted ends therein, two part bearing blocks, the lower part adapted to engage said axle and rounded on top to receive the correspondingly rounded bottom of the upper part, said blocks being adapted to fit and move in said slots, carrying springs in said slots engaging said frames and carried by said bearing blocks, substantially as specified.

712,583. Controlling mechanism for motor vehicles. James W. Packard and William A. Hatcher, Warren, Ohio, assignors to Ohio Automobile Company, Warren Ohio, a corporation of West Virginia. Filed February 12, 1902. Serial No. 93,756. (No model.)

Claim.—1. The combination with a driving shaft and a parallel driven shaft, each having gears thereon and rotatable therewith, the gears upon one of the shafts being adjustable lengthwise thereof into and out of engagement with co-operating gears on the opposing shaft to effect change in speed, of devices for shifting the movable gears comprising a reciprocative cam plate having cam slots or grooves therein, and shifting arms engaging said slots and adapted to move the gears.

712,588. Adjustable bearing for wheels. James A. Plopper, Chicago, Ill., assignor to Plano Manufacturing Company, Chicago, Ill., a corporation of Illinois. Filed March 22, 1902. Serial No. 99,451. (No model.)

Claim.—1. In a device of the class described, the combination with the bearing member having the cam flange thereon, of the base piece having a lug adapted to cooperate with said flange, and means for clamping the bearing member securely in any desired position of adjustment on the base piece.

712,717. Electric motor. Oscar H. Pieper, Rochester, N. Y. Filed December 4, 1901. Serial No. 84,614. (No model).

Claim.—1. The combination with an electric motor having field magnets and coils, an armature, commutator and commutator brushes, of a transformer independent of the field coils or magnets, having its primary connected in series with one of the windings of the motor and its secondary in series with the other.

712,733. Steel spring tire for vehicles. John A. Shearer, Schenectady, N. Y. Filed October 31, 1901. Serial No. 80,586. (No model.)

Claim.—1. A yielding tire formed of sheet metal segments having T-shaped slots on each side and bent into tubular form and having the slotted sides thereof joined together at the inside of the tire.

712,739. Electric spark generator. Joshua Struthers, Des Moines, Iowa, assignor to J. F. Crosby, Des Moines, Iowa. Filed March 10, 1902. Serial No. 97,422. (No model.)

Claim.—1. An improved electric spark generator, comprising in combination, a field coil, an armature rotatably mounted in the field coil, a commutator on the armature shaft, brushes in engagement with the commutator, binding posts mounted on the machine frame and electrically connected with the commutators, a metallic bar mounted on the machine frame and capable of engaging both binding posts at the same time, a centrifugal governor on the armature shaft, and means whereby, when the governor is thrown outwardly by centrifugal force, the bar will be moved into position in engagement with both binding posts, for the purposes stated.

712,791. Muffler for internal combustion engines. Carl C. Hedstrom, Portland, Conn., assignor to George M. Hendee, Springfield, Mass. Filed October 28, 1901. Serial No. 80,192. (No model).

Claim.—In a muffler having closed ends and a discharge opening in one of said ends, the combination of a deflecting plate secured by one edge to said end, and having its opposite edge in close proximity to the surface of said end, whereby the gases are turned from their normal line of discharge and are deflected to issue from said plate in opposing directions, in the same plane.

712,805. Explosive engine. Whitcomb L. Judson, Chicago, Ill. Filed April 25, 1901. Renewed July 3, 1902. Serial No. 114,272. (No model.)

Claim.—1. A multicylinder explosive engine having its cylinders connected in an endless series by flame ducts, the last of which connects the last cylinder with the explosion chamber of the first cylinder, whereby the charges in the several cylinders are exploded in a continuous recurring order.

712,825. Motor car or other vehicle. James F. Mason, London, England. Filed July 29, 1902. Serial No. 117,442. (No model).

Claim.—1. In a road vehicle or the like means for preventing the inrush of dust laden air consisting of a deflector supported above the body of the vehicle for deflecting the air current produced by the motion of the vehicle against the inrushing current of dust laden air.

712,829. Motor vehicle. John E. Millard, Poughkeepsie, N. Y. Filed August 12, 1902. Serial No. 119,431. (No model.)

Claim.—1. In a motor vehicle, the combination of a frame having a longitudinal central, horizontal lug at its forward end, and one or more horizontal, longitudinally disposed lugs at its rear end, a front axle having a horizontal, longitudinally disposed bearing at its middle receiving the forward lug of the frame, a rear axle having one or more horizontal, longitudinally disposed bearings loosely receiving the rear lug or lugs of the frame, whereby the said rear axle is adapted to be adjusted with respect to the frame suitable means connecting the frame and the front axle, and one or more adjustable connections between the frame and the rear axle.

712,875. Vehicle wheel. Sidney B. Whiteside, New York, N. Y., assignor to Whiteside Wheel Company, Limited, Grand Rapids, Mich. Filed February 8, 1902. Serial No. 93,178. (No model.)

Claim.—1. A vehicle wheel consisting of a rim, a hub in two parts separated on a plane transverse to the axis, two sets of spokes connecting the rim with the respective parts of the hub, means whereby said parts may be adjusted in a circumferential direction with respect to each other, each part being provided with corresponding circular rows of teeth adapted to line up with each other, and a ring adapted to engage with both rows of teeth to lock the parts of the hub against relative movement.

TRADE MARKS.

39,212. Rubber tires for vehicles. International Automobile and Vehicle Tire Company, New York, N. Y. Filed September 26, 1902.

The word "Endurance." Used since October, 1901.

INFORMATION WANTED

We want to learn all we can about the horseless carriages which were made in this country from eight to twenty five years ago. These old automobiles, even though they may have been in advance of the times, are legitimate parts of the history of the development of the automobile in the United States, and many of them, we believe, embodied characteristics of construction now in use, for which some one other than the true inventor is receiving credit. Address,

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"The reason for this is very simple. Water always remains in the steam pipes, and in the engine itself from the condensed steam of the previous run. This water must be got rid of first, and the cylinders, etc., warmed up before the engine is capable of doing its full amount of work."

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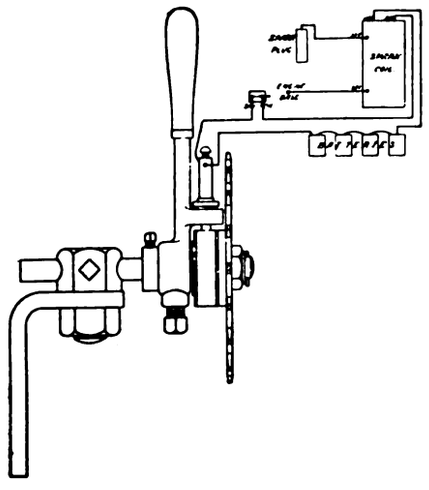
Serious consideration is being given to the proposal to run the 1903 Bennett Cup race in Ireland. A committee of the Automobile Club of Great Britain has gone to Ireland to look over the ground and inspect the roads. Its report is awaited with great interest, as there is no longer any hope that it will be possible to hold the race in England.

At a recent meeting of the club letters were considered from the Scottish Automobile Club, the chairman of the Manchester Automobile Club and the secretary of the Irish Automobile Club, dealing with the feasibility of holding next year's race for the cup in Scotland, the Isle of Man and Ireland respectively.

Details of Detroit Igniter.

It is claimed for the Detroit Igniter, manufactured by the Detroit Motor Works, Detroit, Mich., that it can be put on any engine of one or more cylinders by the user of the engine.

With the igniter one can readily shift the commutator handle for late ignition to start the engine, and, after engine is started, place



the lever so as to secure any point of ignition desired.

As the moving parts of the igniter are on the inside of the cylinder, there is nothing to become gummed up and stick. The sparking plug screws through the cylinder wall into the combustion space, so that it can be removed in a moment's time, if necessary to inspect or clean. The spark jumps between the intervening points at the end of the plug, these points being about 1-32 inch apart, the spark taking place when the brushes come in contact with the copper strip in the commutator roll.

The vibrator on the spark coil should be adjusted so that the greatest efficiency is shown by sparks thrown from end of wire to end of spark plug when the wire is disconnected and commutator brushes are on copper strip. By using the secondary winding in the spark coil (which causes the jump spark), and by the manner of connection a better spark is obtained than with any other igniter, as the voltage is much higher and less battery force is used. This igniter is very frequently run with only two dry cells.

When an Engine Stops.

When an engine stops work, and the owner diagnoses, or believes he diagnoses, the reason, it is well to test that diagnosis first before going on to anything else, for if, say, he cleans and tests his sparking plugs, inspects and tests the valves, agitates the carburetter, varies air feed and fills up the petrol tank all before he restarts the engine, he is then quite innocent of the real stopping reason and has not advanced in knowledge. Whereas, if the inducements to restart are tested one by one, he discovers what was really the cause of failure and is far more likely to recognize it at once should it exercise its baleful influence at any future time.

Freeing the Piston Rings.

After returning from a run and putting up a car a little gasolene should be injected into each cylinder of the engine, and the crank shaft revolved half a dozen times or so. This frees the piston rings from any oil which might glue them up when left for a day or two, and greatly facilitates the starting of the engine when the car is next taken out.



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Springfield, Ohio, assignor of one-half to Paul A. Staley, Springfield, Ohio. Filed April 21, 1902. Serial No. 103,924. (No model.)

Claim—1. The combination of a body, a motor and driving shaft mounted on said body, an axle, rigidly connected corner pieces journalled on said axle, a frame rigidly connected to said corner pieces, said shaft being flexibly extended and journalled on said frame, and supporting springs for said body rigidly attached to said corner pieces, whereby said frame and shaft are elastically held in position under the vibration of the machine, substantially as specified.

713,351. Pneumatic Tire. Charles H. Shepard, North Plainfield, N. J. Filed November 1, 1900. Serial No. 35,144. (No model.)

Claim—1. A pneumatic tire having a metallic armor plate embedded in the tread surface thereof, said plate having laterally projecting tongues arranged in staggered relation on opposite sides thereof formed by lateral incisions in the plate, the incisions on one side lying opposite the spaces between the incisions on the opposite side, and those on both sides terminating short of the medial line of said plate, as and for the purpose set forth.

713,366. Internal Combustion Engine. Henning F. Wallmann, Chicago, Ill., assignor to the Wallmann Engine Co., a Corporation of Illinois. Filed February 3, 1900. Serial No. 3,842. (No model.)

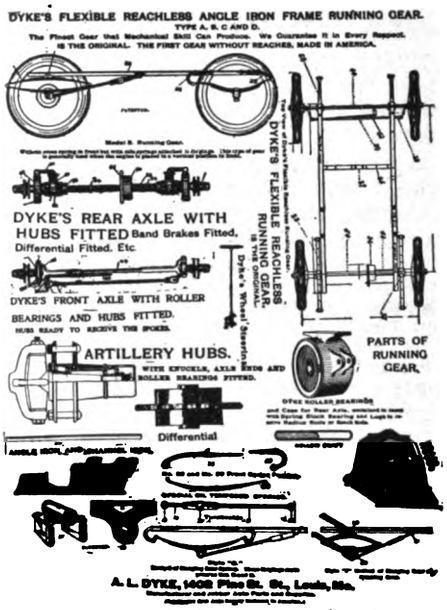
Claim—1. In an internal combustion engine, the combination with a combustion cylinder, of means for supplying a body of compressed air thereto for the combustion of the fuel, means for subsequently injecting a charge of fuel at a higher pressure into said body of compressed air and for firing the mixture, and means for introducing into the hot expanding products of combustion in the combustion cylinder another body of compressed air commingled with a spray of water or steam, substantially as described.

713,367. Internal Combustion Engine. Henning F. Wallmann, Chicago, Ill., assignor to the Wallmann Engine Co., a Corporation of Illinois. Filed March 21, 1900. Serial No. 9,530. (No model.)

Claim—1. In an oil engine, the combination with a combustion cylinder having an air inlet valve, a fuel inlet valve and an exhaust valve, all located in the head of the cylinder of an air compressor which delivers compressed air to the combustion cylinder past said air inlet valve, the initial portion of said compressed air serving as a scavenging blast and the remainder forming part of the next combustible charge, a second air compressor whose delivery is connected to the casing of the fuel inlet valve, and a fuel pump whose delivery pipe taps the air duct between the discharge port of said second air compressor and the casing of the fuel inlet valve, substantially as set forth.

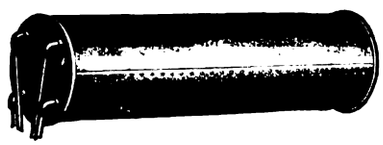
713,536. Exhaust Pipe Muffler for Gas or Other Engines. John L. Tobias and Charles J. Tobias, Chicago, Ill. Filed October 11, 1901. Serial No. 78,353. (No model.)

Claim—1. In a muffler for gas and other engines, the combination of a shell provided with a series of small apertures grouped on one side of the cylindrical wall thereof and extending from one end toward the other end, a bushing in one end wall of the shell, such bushing provided with a shoulder abutting against the end wall, a pipe secured in the bushing, such pipe extending through the other end of the shell and a cap inclosing such pipe, such pipe and cap provided with corresponding screw threads to force the end of the cap against the end of the shell adjacent thereto, and such pipe provided with a series of small apertures grouped on one side thereof and extending from near one end thereof; substantially as described.



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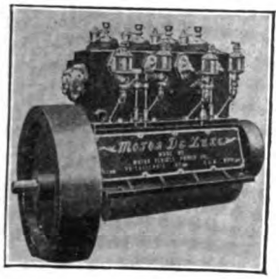
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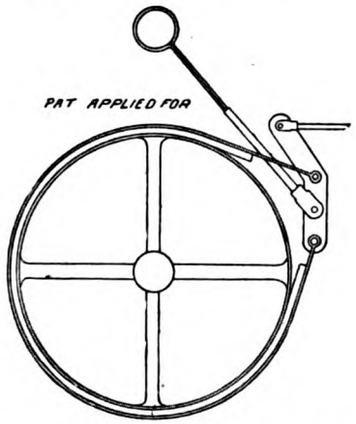
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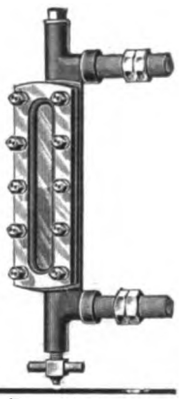


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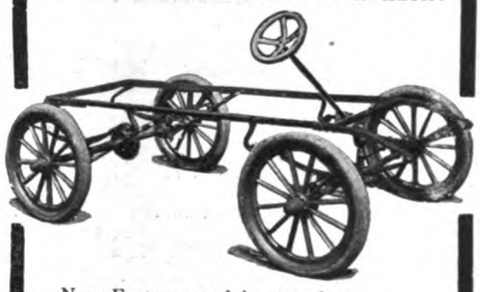
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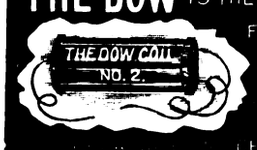
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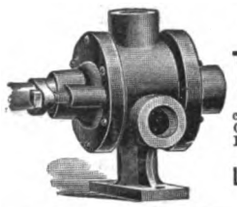
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Improve Your Circulation

BY USING

THE LOBEE PUMP

Increases and gives a positive circulation to the cooling water for all Gasoline Motors. Simple, Cheap Durable, Efficient, easy to apply. Sent on trial to responsible parties.

Lobee Pump & Machinery Co.

120-136 Terrace Buffalo, N. Y.

MONOGRAM OILS AND GREASES

SPECIALLY ADAPTED FOR

AUTOMOBILE LUBRICATION

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Columbia Lubricants Co., 22 Burling Slip, New York.

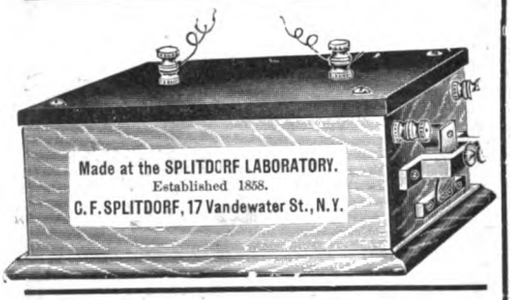
Steam is the Best Power

AND THE

Grout the Best Steamer

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St. Louis
Kansas City
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And the West



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Through
Sleeping Cars
Dining Cars
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THE ONLY LINE RUNNING **FREE** RECLINING CHAIR CARS BETWEEN NEW YORK AND CHICAGO.

FAMOUS "CONTINENTAL LIMITED," leaves New York foot of Franklin Street at 2.25 p. m., foot of West 42d Street 2.45 p. m., arrives Detroit 7.30 a. m., Chicago 3.30 p. m. St. Louis 7.15 p. m., Kansas City 7 15 second morning.

"LACKAWANNA LIMITED," leaves New York oot of Barclay or Christopher Streets at 10.00 a. m., arrives Detroit 2.00 a. m., Chicago 10.50 a. m., St. Louis 2.00 p. m., Kansas City 9.30 p. m. next day.

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Also trains eaving at 2.00 a. m., 1.00 p. m. ,6.20 p. m., 7.45 p. m. For information in regard to ra'es, etc., apply to

H. B. McCLELLAN,

General Eastern Agent,

387 Broadway, New York.

WANTS AND FOR SALE.

15 cents per line of seven words, cash with order.

FOR SALE at a bargain price. A quantity of 2 1-2 x 3 1-2 double acting reciprocating, link motion Stevenson type engines. Perfect for replacements in all the leading steam carriages. For prices, particulars, etc, Address, STEAM CAR, care MOTOR WORLD.

FOR SALE — One Mobile doctor's carriage. In splendid condition—fine top, at a sacrifice. Address, X. Y. Z., care Motor World.

AUTOMOBILES bought, sold and exchanged. C. A. COEY & Co., 5311 Cottage Grove Ave., Chicago, Ill.

FOR SALE—Winton Carriage, 1900 Model Good running order, new tires, excellent reason for selling. Price $375.00. C. F. EARL, Reading, Pa.

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FOR SALE— Land, factory, machinery, carriages and fixtures. A first class carriage factory, up-to-date in every respect; well equipped with modern machinery, etc. Five minutes by trolley and easy walking distance to centre of city; at the same time within a few blocks of railroad depot and steamboat dock. The BOSTON BUCKBOARD & CARRIAGE CO., 155 to 163 East St., Foot of Wooster St., New Haven, Conn.

FOR SALE—An Electric and Steam Automobile, nearly new; will sell at a bargain. Address F. E. BAILEY & CO., Manheim, Pa.

INFORMATION WANTED

We want to learn all we can about the horseless carriages which were made in this country from eight to twenty five years ago. These old automobiles, even though they may have been in advance of the times, are legitimate parts of the history of the development of the automobile in the United States, and many of them, we believe, embodied characteristics of construction now in use, for which some one other than the true inventor is receiving credit. Address,

"HISTORY" care Motor World.

GOLD MEDAL WINNERS. HIGHEST AWARD.

Prescott Steam Carriages

NEVER BURN OUT BOILER AND NEVER SHORT OF STEAM.

Look before you buy. See report of New York-Boston Run.

AGENTS ASSIGNED IN UNOCCUPIED TERRITORY.

PRESCOTT AUTOMOBILE MFG. CO., 83 Chambers Street, New York.

STEARNS CARS ARE WORTH MORE THAN THEY COST.

SMITH & MABLEY,

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AUTOMOBILES.

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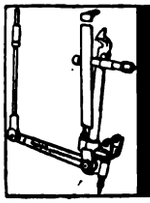
CHARRON, GIRARDOT & VOIGT CARS MADE IN AMERICA.

THE LOCOMOBILE COMPANY

OF AMERICA,

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Agency correspondence may be addressed to New York Office or nearest Branch Office.



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POWER AIR PUMP

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AUTOMOBILES

STEAM, GASOLENE AND ELECTRIC,

BOUGHT, SOLD, EXCHANGED, STORED REPAIRED AND RENTED.

Accessories of all kinds furnished. Expert repairmen constantly on duty. Bargains in slightly used automobiles, steam, gasolene and electric, constantly on hand.

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AUTOMOBILE EXCHANGE AND STORAGE CO.,

133 135, 137 and 139 W. 38th St. NEW YORK.

Two doors from Broadway.

Get a Good Night's Rest

THIS ALWAYS ASSURED

When you use the

Compartment Sleeping Cars

CINCINNATI to CHICAGO

via

C H & D and Monon

A room to yourself.
Regulate the heat, light and ventilation to suit your convenience.
Every necessary toilet convience in your room.

Ask any ticket agent for train schedules, or address

D. G EDWARDS, P. T. M., Cincinnati, O.

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The WHITE Steam Carriage



AN AUTOMOBILE THOROUGHBRED.

In the 500-mile Reliability Contest from New York to Boston and return, arranged by the Automobile Club of America, three **WHITE STEAM STANHOPES** covered the distance without stop or trouble of any kind—a perfect performance.

The White Steam Generator is absolutely non-explosive, gives pressure in five minutes from cold water, and once in motion is self-regulating. In touring, the **WHITE** will make 100 miles without adding a drop of water or fuel to the original supply.

Write for full particulars, including Prof. Thurston's report on our steam generator, and the official reports of important endurance contests.

WHITE SEWING MACHINE CO.,

(AUTOMOBILE DEPARTMENT) CLEVELAND, OHIO.

22 Union Square, New York, N. Y.
509 Tremont St., Boston, Mass.
300 Post St., San Francisco, Cal.
12 Woodward Ave., Detroit, Mich.
609 Main St., Buffalo, N. Y.
300 Rose Bldg., Cleveland, Ohio.
4259 Olive St., St. Louis, Mo.
1761 Stout St., Denver, Colo.
5979 Centre Ave., East End, Pittsburg, Pa.
WALTER C. WHITE, European Representative,
19 Princes St., Westminster, London, England.

THE HAYNES-APPERSON

is the only automobile that has been consistently developed through 10 years of successful experience on American roads.



The same development that has given foreign cars their reputation has given the Haynes-Apperson its proved reliability, but because of the more severe conditions under which it has been produced there is no car of equal horse power that will last as long, handle as easily and ride as smoothly on American highways as this American product.

Runabout, 7 horse power, 2 passengers, $1200.
Phaeton, 12 " " 2 " 1500.
Surrey, 12 " " 4 " 1800.

DELIVERY IN TEN DAYS ON IMMEDIATE ORDERS.

ASK OUR CUSTOMERS. *GET OUR BOOKLETS.*

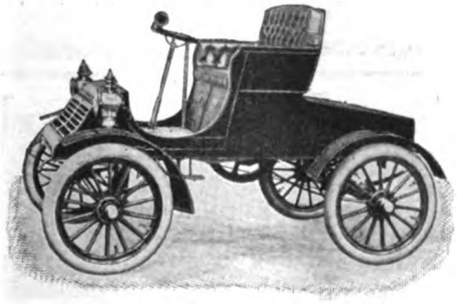
See Our Exhibit at the New York and Chicago Shows.

HAYNES-APPERSON CO., Kokomo, Ind., U.S.A.

YOU ARE SAFE in buying the

AMERICAN Gasolene Automobile

because it is honestly built by responsible makers who GUARANTEE it.



What more can you want? You will get more solid comfort and service at a minimum cost in owning an AMERICAN than any other car you can buy.

More information and terms to agents for asking.

THE AMERICAN MOTOR CARRIAGE CO.,

514–520 East Prospect Street, CLEVELAND, OHIO.

PARDEE & CO., Western Distributors, 1404-1406 Michigan Boulevard, Chicago, Ill.

THE NEW WINTON

BEYOND QUESTION THE MOST LUXURIOUS AND COMPLETE HIGH-GRADE AUTOMOBILE EVER MANUFACTURED IN AMERICA.

It will be in the hands of agents and at branches within a very few weeks. Twenty h. p. motor, new body design, etc., etc.

Write us and we will gladly tell you more about it.

THE WINTON MOTOR CARRIAGE CO.,

FACTORY AND GENERAL OFFICES:

CLEVELAND, U. S. A.

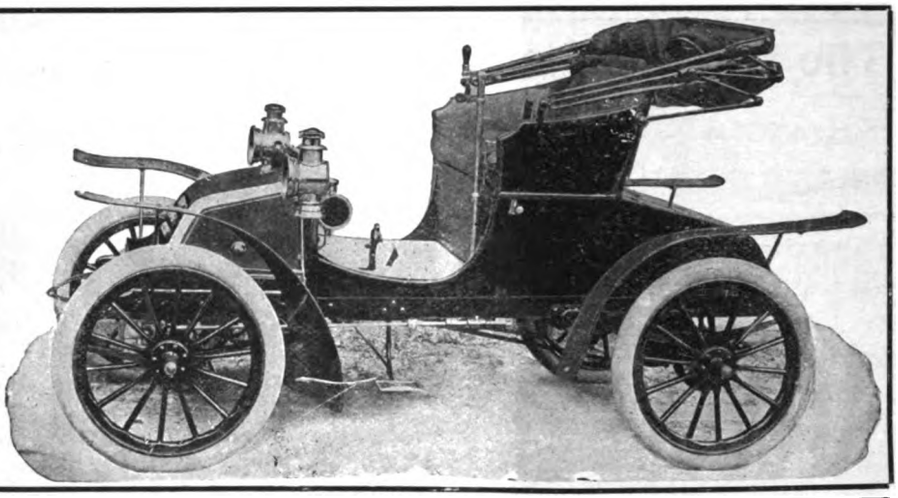
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An
American
made Gasolene
Automobile. It is famous.

The AUTOCAR

In a class by itself
at $1700. Advance
sheet ready.

THE AUTOCAR CO., Ardmore, Pa. Box A123



"The Strongest Indorsement."

THE GOODMAN COMPANY, Utica, N. Y., October 10, 1902.
New York City.

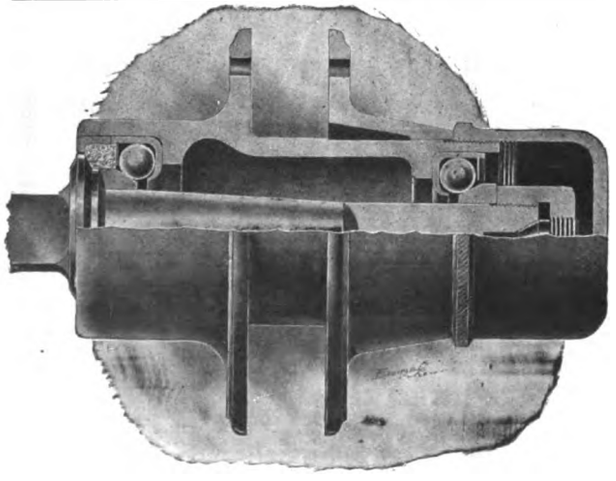
Gentlemen:—With regard to advertising in THE MOTOR WORLD, would say that the strongest endorsement any advertiser can give a medium is by continuing to use its columns.

We were among the very first advertisers in THE MOTOR WORLD when it was started. We believe at that time there were not more than half a dozen others at the outside.

We have continued with the paper regularly ever since, and so long as the paper remains as at present, we undoubtedly will continue to be in it.

We advertise in the WORLD because we know that it appeals to a certain class of the automobile industry that none of the other trade papers do, as well as covering the entire field, of course.

Yours truly, WESTON-MOTT COMPANY,
F. G. MOTT, Jr.



Artillery Wheels.

We are now prepared to furnish these Hubs, Ball-Bearing and Key-Seated, for Automobiles weighing from 500 to 4,000 pounds.
Front Hubs are Ball-Bearing and are assembled on our well-known Steering Axles.
Rear Hubs furnished with Ball-Bearings or Key-Seated.

ALL RACES ARE GROUND IN POSITION IN HUBS. CONES AND CONE SEATS ON SPINDLES ARE GROUND TO GAUGE.

Hubs and Spindles are machined Right and Left.

WRITE US REGARDING YOUR REQUIREMENTS.

THE AMERICAN BALL-BEARING COMPANY, Cleveland, Ohio, U.S.A.

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When Ordering an Automobile Specify the "Exide" Battery.

EXIDE BATTERY DEPOTS FOR FURNISHING, CHARGING AND CARING FOR EXIDE BATTERIES:

NEW YORK 148 West 18th Street. PHILADELPHIA, 250 North Broad Street. BUFFALO, 200 Pearl Street.
CHICAGO, 264 Michigan Boulevard. ST. LOUIS, 3937 Olive Street. DETROIT, 101 Woodward Avenue.

THE ELECTRIC STORAGE BATTERY CO.

PHILADELPHIA.

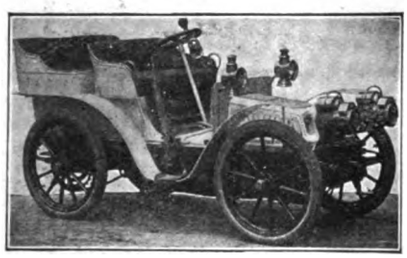
PHILADELPHIA, Allegheny Ave. and 19th St. NEW YORK, 100 Broadway. BOSTON, 60 State St.
CHICAGO, Marquette Building. BALTIMORE, Continental Trust Building, CLEVELAND, New England Building.
ST. LOUIS, Wainwright Building. SAN FRANCISCO, Nevada Block. DETROIT, Michigan El. Co., 101 Woodward Ave.
HAVANA, CUBA, G. F. Greenwood Mgr., 34 Empedrado St.

FRENCH AND AMERICAN AUTOMOBILES.

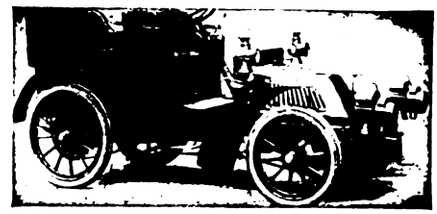
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4 Cylinder Front.
BLUE RIBBON WINNER
Long Island Endurance Test.



8-H. P. MORS.



10-H. P. PEUGEOT.

REPAIRS. The Central Automobile Co. 1684 Broadway. Telephone: 596 Col STORAGE.

Prompt Deliveries of 5 AND 10 H. P. PEUGEOT, 8 AND 15 H. P. MORS.

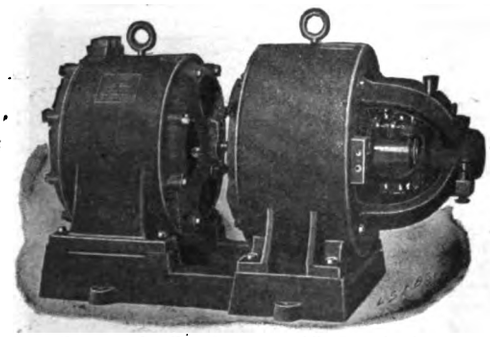
OPEN DAY AND NIGHT.

Prompt Deliveries of 10-H. P. COTTEREAU AND ELECTRIC VEHICLE COMPANY'S ELECTRICS.

LARGEST AND BEST EQUIPPED AUTOMOBILE DEPOT IN THE UNITED STATES.

ALL KINDS OF FRENCH AUTOMOBILE PARTS KEPT IN STOCK.

ELECTRICS CHARGED AND KEPT IN FIRST-CLASS ORDER.



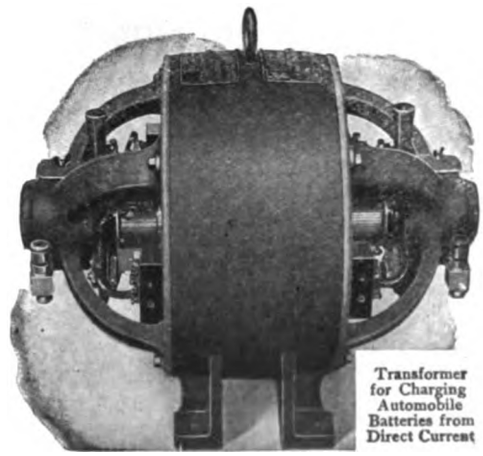
Convertor for Charging Automobile Batteries from Alternating Current.

WE ARE MANUFACTURERS OF THE

Standard Electric Motors

THAT ARE NOW USED ON ALL THE MOST SUCCESSFUL ELECTRIC AUTOMOBILES in the country.

Our machine is the **MOST EFFICIENT and PRACTICAL OF THEM ALL**—as demonstrated by hundreds of them in daily use all over the country.



Transformer for Charging Automobile Batteries from Direct Current

THE ELWELL-PARKER ELECTRIC CO.,
CLEVELAND, OHIO.

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NEW MODEL 6

ELMORE

$1500 Auto for $800.

DOUBLE CYLINDER MOTOR. PERFECT ACTION
EASY TO CONTROL AT ANY SPEED.
THREE POSITIVE SPEEDS FORWARD AND REVERSE.

A Blue Ribbon, 100 Per Cent., Proposition to Agents.

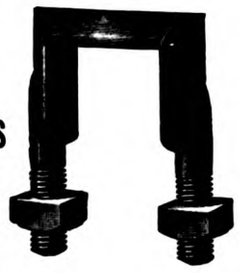
ELMORE MANUFACTURING CO., Clyde, O., U. S. A.

THE M. SEWARD & SON CO.

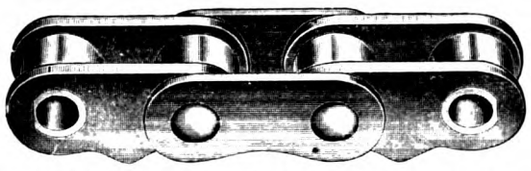
NEW HAVEN, CONN.



MANUFACTURERS OF
CARRIAGE HARDWARE
AND
Special Drop Forgings
FOR
Automobiles
AND OTHER WORK.



We are prepared to make estimates from drawings or models and guarantee first-class work.



THE WHITNEY MFG. CO.

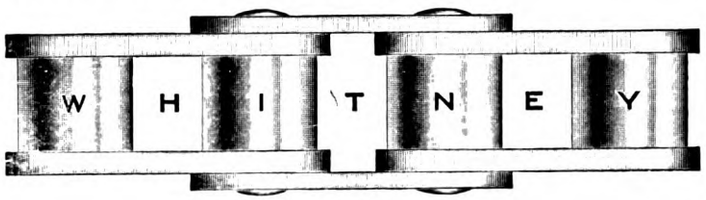
HARTFORD, CONN.

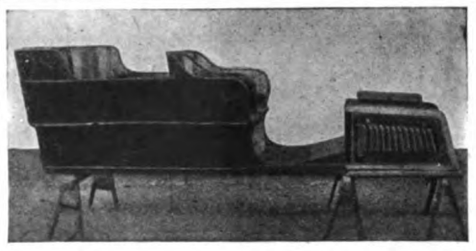
The smallest chain used on any automobile in the New York-Boston Reliability Contest was a

"WHITNEY."

This is what the automobile manufacturer (who received a first-class certificate) wrote us about the chain:

"The chain gave perfect satisfaction in every respect and at the end of the 500 mile run only showed a stretch of about 1-8 of an inch. I consider this to be a remarkable test for the chain as it is no heavier than one used on bicycles a few years ago. The quality of the material that you use must be the best to withstand a test of this description."





ALUMINUM
Automobile Bodies, Fenders and Bonnets
BUILT and REPAIRED

J. M. QUINBY & CO.

Carriage Builders NEWARK, N. J.

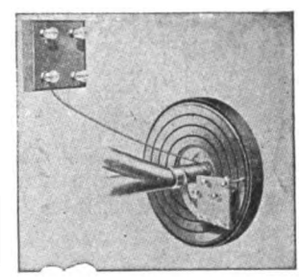
YOU CANNOT GET MORE FOR YOUR MONEY

than by using $2.00 of it to subscribe to

The Motor World

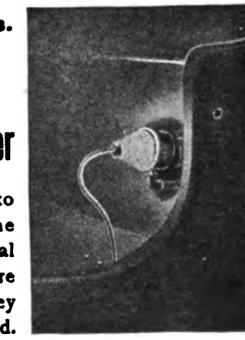
In which each week appears a record of all that is best, brightest and newest in the world of mechanical traffic.

INSURE Against Annoying Police Mistakes.



The Mott Speedometer

will enable you to ride up to the full, local, legal limits. There are 4 speeds and they can't be disputed.



Night riding is Safer, Pleasanter, Easier, when you have a Mott Cage Illuminator. We'll tell you more of what they tell you if you will write LAURENCE MOTT, 106 Sudbury St. Boston.

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GOODRICH
Clincher Double Tube Automobile Tires



will be the regular equipment on more Touring Cars in 1903 than all other makes of motor tires combined. Such a showing is reasonable proof that the use of Goodrich Clincher Automobile Tires will add to the good name of your machine and greatly lessen the tire troubles that you may have experienced heretofore.

ALL REPAIR OR ADJUSTMENTS MADE AT THE FOLLOWING BRANCHES, WHICH CARRY A FULL AND COMPLETE LINE OF STANDARD SIZES OF TIRES AND PARTS CONSTANTLY ON HAND.

The B. F. Goodrich Company,

MANUFACTURERS,

AKRON, - OHIO.

BRANCHES:

1699 Broadway, New York City. 141 Lake Street, Chicago. 157 Summer Street, Boston.
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KELECOM GASOLENE MOTORS, AUTOLYTE ACETYLENE LAMPS, AUTOMOBILE HORNS.

SEND FOR CATALOGUE AND PRICES.

A. H. FUNKE, 325 Broadway, New York



The Tires

on an automobile either increase or retard its speed. Resilient tires give additional power and greater mileage.

G & J Detachable Tires

have been proven the speediest of all vehicle tires, and they wear longest. Descriptive Catalog and full information on request.

G & J TIRE CO.
INDIANAPOLIS, IND.

GOLD MEDAL WINNERS. HIGHEST AWARD.

Prescott Steam Carriages

NEVER BURN OUT BOILER AND NEVER SHORT OF STEAM.

Look before you buy. See report of New York-Boston Run.

AGENTS ASSIGNED IN UNOCCUPIED TERRITORY.

PRESCOTT AUTOMOBILE MFG. CO.,
83 Chambers Street, New York.

OF INTEREST TO MANUFACTURERS

Write for a copy of pamphlet just issued by the

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giving reliable information concerning nearly 200 desirable locations for industries, and entitled

INDUSTRIAL SITES IN TEN STATES.

Address GEORGE C. POWER
Industrial Commissioner Illinois Central Railroad.
Room 306 Central Station, Chicago, Ill.

IT IS ESTIMATED THAT

60%

OF

Automobile Troubles

ARE

ELECTRICAL TROUBLES.

It follows that, at least, an elementary knowledge of electricity will go far towards making for the fullest measure of pleasure and satisfaction.

"The A B C OF Electricity"

will impart this very knowledge.



108 PAGES; 36 ILLUSTRATIONS.

The book is entirely non-technical and can be understood by the man who does not know "the first thing" about electricity

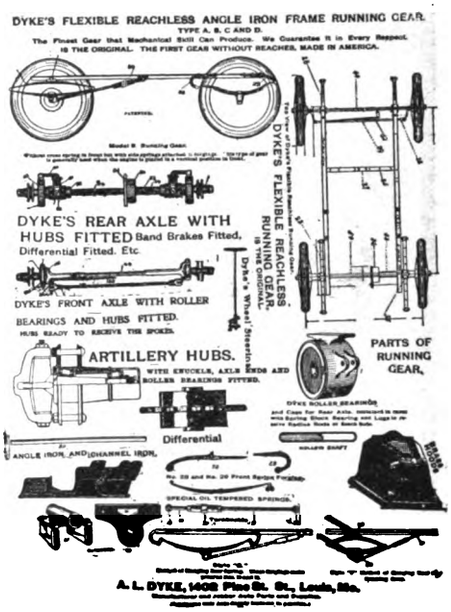
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THE GOODMAN COMPANY

123-125 Tribune Building,

NEW YORK.



Send Stamp for Catalog and Supplement

Seamless Steel,

BOILER SHELLS,

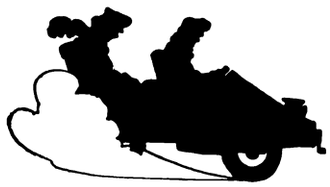
PRESSURE RESERVOIRS,



GASOLENE TANKS.

STEEL SHAPES STAMPED OR DRAWN.

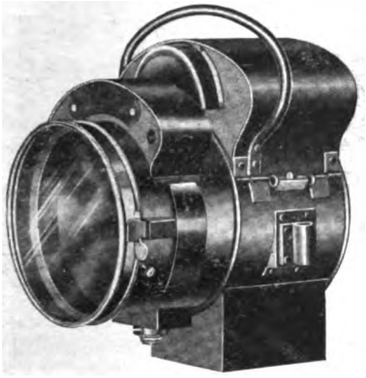
JANNEY, STEINMETZ & CO., Philadelphia.



KEEP the auto up to the top notch of speed and ease of running by using Dixon's Graphitoleo. Ask for a free sample and booklet 83 about it.

JOSEPH DIXON CRUCIBLE COMPANY,
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Solar Motor Lamps

GAS "Show the Way" OIL



The 1903 Models
of Side Lamps and Headlights
Are of the Very Latest and Most Stylish Design

Are the Greatest Light Projectors Ever Produced



Scientifically and Substantially Constructed
Simple, Safe and Satisfactory

All our Gas Lamps are fitted with NEW PATENT VALVE which turns ON and OFF both WATER and GAS.
(The Greatest Improvement in Acetylene Gas Lamps ever made.)
MOST MAKERS WILL MAKE SOLAR LAMPS THEIR STANDARD LAMP EQUIPMENT.
A test will convince you and our prices will get your business.
We want to hear from you and Submit Samples suitable for your car for trial and approval.



THE BADGER BRASS MFG. CO., KENOSHA, WIS.

The New York-Boston-New York Reliability Contest proved that we always win and you never lose.

When a tire goes down you want wheels which will stand up—

They are Weston-Mott every time.

We give you the choice of two kinds and you get one result.

The choice we give:
WOOD OR WIRE WHEELS
(and they are interchangeable).

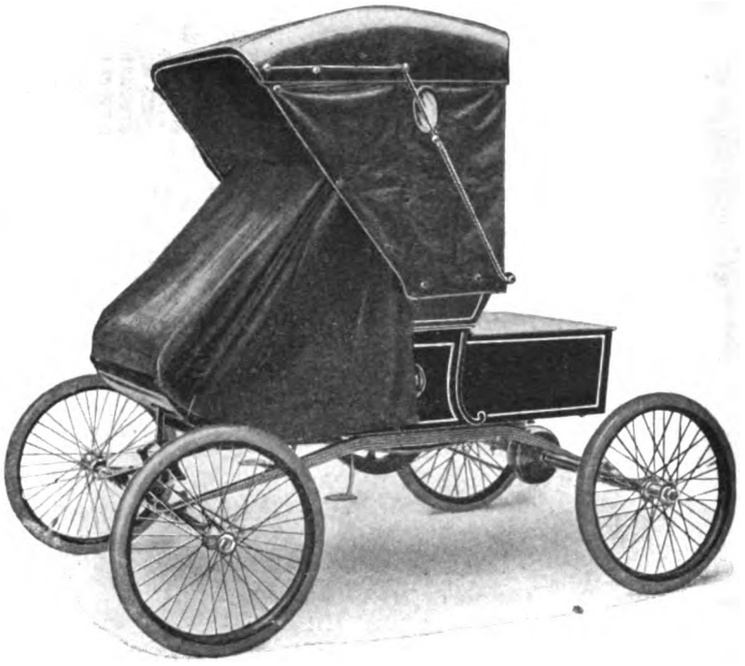
Steering Axles.

The result you get:
SATISFACTION
(and that's everything).

STEEL RIMS
of every section and every size.

WESTON-MOTT COMPANY, - - Utica, New York.

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The Oldsmobile

FOR 1903.

"THE BEST THING ON WHEELS."

The same handsome and useful style will be retained by this standard runabout. All machines now leaving our factories are equipped with the 1903 inprovements.

The four Oldsmobiles entered in the New York-Boston Reliability Run were all awarded first-class certificates, and one of them was the only machine in the 1000 pounds under class to finish with a clean score—the only one to qualify for the President's Cup.

The OLDSMOBILE has been widely copied. It is easier to sell than imitations because it is better known and is the cheapest reliable Automobile in the world.

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Oldsmobile Co., Githens Bros., Chicago, Ill.
Fisher Automobile Co., Indianapolis, Ind.
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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, November 27, 1902. No. 9

FOR BUSINESS VEHICLES

A. C. A. Committee Decides to Hold Such a Contest Next Spring—Interest Already Alive.

The Automobile Club of America will promote a business vehicle contest next spring. That step has been decided upon. The execution of the plan will be left to the new contest committee, and neither time nor money will be spared to make the event an unequivocal success.

At the first of the season's Tuesday night talks of the A. C. A., George F. Chamberlin, a member of the old contest committee, made a suggestion that the club father such an event. With the object of seeing what consideration had been given to the matter a Motor World representative saw Mr. Chamberlin at his office on Monday and asked him the direct question.

"The suggestion has been received with favor," he said. "Indeed, I may add that it has been definitely decided to hold a contest for business vehicles. No formal steps have been taken in the matter, it being the purpose to leave it entirely in the hands of the new contest committee, which will be appointed by the board of governors at its meeting to-morrow afternoon.

"But the matter has been talked over informally in the board, and it is a certainty that the contest will be held. It is felt that the time is ripe for such an event, and that the club is the one to take the initiative. It will give liberally of its means to make the contest a success. Nothing will be left undone to accomplish this end.

"Already letters bearing on the subject and asking us to push such a project through have been received. About half a dozen firms—one of them English—have written us to this effect."

On Tuesday the board of governors appointed John A. Hill chairman of the contest committee, and gave him the privilege of selecting his colleagues. The old committee consisted of Chairman W. E. Scarritt and Messrs. George F. Chamberlin and John A. Hill.

Mobiles at $550.

Ever since E. B. Gallaher assumed the management of the Mobile Co. of America reports have been current that the much-mooted "$500 automobile" would be forthcoming from that factory. Early this week the reports took tangible form, the Mobile Co. formally announcing not exactly a $500 car but one at $550. In general design this runabout does not differ from previous Mobiles, its specifications being as follows:

Running gear, 16 and 14-gauge seamless steel tubing; wheels, wire suspension type, 28 inches in diameter; tires, Hartford Pneumatic, 2½ inches; seat, spindle back; width of seat, 37½ inches; seating capacity, two persons; water tank, 22½ gallons; gasoline tank, 6½ gallons; tread, 50 inches; wheel base, 58 inches; total length, 7 feet 3½ inches; total width, 4 feet 11 inches; total height, 5 feet 5 inches; steam air pump; mechanical cylinder oil pump; low water alarm; double-acting brake.

Of the car the Mobile people themselves say: "The runabout which we are offering is in several ways superior to the cars we sold last year at $750. It could not be better built if we charged $5,000 instead of $550.

The same announcement heralds a reduction of the price of the Mobile delivery wagon to $1,085.

Duryeas East and West.

Papers for the incorporation of the Waterloo Motor Carriage Co., of Waterloo, Ia., are about to be drawn up. The concern will have a capital of $150,000, full paid, and will manufacture cars designed by Charles E. Duryea, which will be practically identical with those of the Duryea Power Co. Mr. Duryea will divide his time between Waterloo and Reading, Pa. There is no truth in the report that the Reading concern will be removed to Waterloo. The two companies are entirely separate.

Bids Opened for Factory.

Bids were opened last week for the erection of the new factory of the Sandusky (O.) Automobile Mfg. Co., and the contract awarded. The work will be pushed vigorously, and the building is expected to be ready for occupancy next spring.

REMINGTON IN TROUBLE

Court Asked to Adjudge Utica Concern a Bankrupt—Steps Taken to Straighten Affairs.

Proceedings in involuntary bankruptcy were commenced last week against the Remington Automobile and Motor Co., Utica, N. Y.

The proceedings were instituted by George E. Dennison as attorney for three creditors, whose claims are stated to aggregate $500 in excess of securities held by them. The largest creditor is the Utica Steam Engine and Boiler Works, with a claim for $600. The other creditors are William C. McAdam, for $25, and William J. Sullivan, for $58.29. They allege that the company is insolvent and unable to pay its bills, and that it committed an act of bankruptcy on November 13 in allowing certain creditors to obtain judgments and secure executions under which certain property of the company was ordered sold.

A meeting of a number of those interested in the concern was held at Utica just previous to the institution of the bankruptcy proceedings, at which the affairs of the company were gone over. Those present professed absolute faith not only in the excellence of the motor but as well of the success of the enterprise with proper capital and management. A committee was named to give the matter attention at once and endeavor to straighten out matters so that manufacturing can go on again soon under better conditions than ever before. The committee consists of Messrs. Wild, Foster, Munson, Dana, Graham and Baechle.

Will Attend Paris Show.

F. A. La Roche, of the American Darracq Automobile Co., and E. T. Kimball, of the Central Automobile Storage Co., are two of the few American tradespeople who will attend the Paris show. The former sails this week; the latter left on Saturday last.

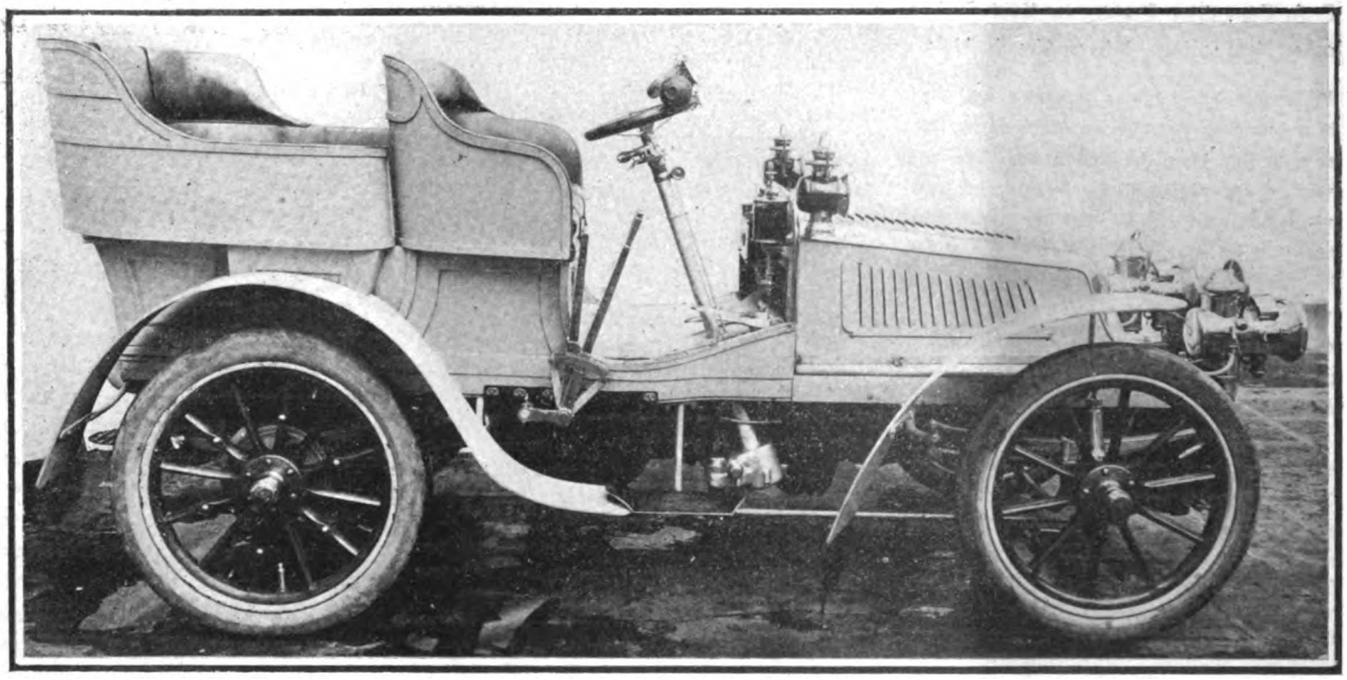
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EUROPE'S NEWEST CAR

It's a Belgian Production and Incorporates Several Innovations—What They are.

French Bureau Motor World,
2 Rue d'Abbeville.

Paris, Nov. 14.—The Fabrique Nationale d'Armes de Guerre, of Herstal-lez-Liege, Belgium, is one of the most enterprising firms when it comes to making use of their huge plant to produce something for which the demand is of a less intermittent character than small arms. They have created a special automobile department and have carefully studied the progress of motor vehicle construction, with the result that after turning out several experimental types of cars during the past two or three years they are now putting on the market a light carriage which presents some extremely interesting features.



The new F. N. car here shown is propelled by a sixteen nominal horse power engine of the four cylinder vertical type. One of its special features is that it is probably the slowest engine fitted to a vehicle of this class. Running normally at 650 revolutions, the makers naturally claim that it is much more durable than the high speed motors running at double this rate, but though theoretically this may be true, knowledge of the durability of engines is so vague that it is difficult to say whether with the perfect systems of balancing and lubrication now employed the advantage is so great as it ought to be. In any event the Fabrique Nationale has secured this result without any considerable increase in weight, and there can be no doubt as to its being a very quiet running engine. Under the circumstances, therefore, the makers can very well claim that in their case the relatively slow moving engine has a decided superiority. The motor itself is of extremely simple construction, with every part inclosed in accordance with modern practice, even to the exhaust valve cams. Lubricating oil is conveyed by separate pipes to the different working parts, and as just sufficient oil is supplied where needed there is no waste. On inspecting the car after a whole day's run we were particularly struck by the cleanliness of the engine.

The motor is regulated for its normal power of 16 horsepower at 650 revolutions by the carburetter which has a tubular extension something like the Mercedes. A plunger valve covers and uncovers the ports leading to the induction pipe by means of a long lever passing across in front of the engine. This lever is actuated by a small rod, one end of which engages in a grooved collar on the half time shaft and is moved backward and forward by the governor, simultaneously, of course, with the exhaust cams. When the engine has a tendency to race under a light load the collar moves forward and causes the lever to partly close the admission ports of the tubular regulator. The merit of the system is its extreme suceptibility and absolute certainty of action. To increase the speed the ports are held open by a pedal worked lever, when the engine will develop up to twenty horsepower.

Another interesting feature about the F. N. car is the change speed gear. The principle of it is not new, as something like it is seen in the Renault vehicle, but the application is decidedly ingenious. It is arranged for three forward speeds with direct drive on the top speed. It is composed of two triangular pieces known as a "cavalier," and they swing to the right and left on a shaft at the apices. At each of the bottom angles they are connected by shafts carrying wheels for the first and second speeds, and the triangular pieces are cut away between these shafts for the passage of the motor shaft. By moving the cavalier one way or the other either the first or second speed wheels are put in gear with the wheels on the motor shaft, and when the triangular pieces are moved to a vertical position, so that neither of the side wheels are in mesh, the drive is direct through the central shaft. The gear is very small and compact and of course runs in an oil bath. Power is transmitted by a shaft to the differential in which the usual cardan joint is replaced by an expanding joint which it is claimed is stronger and more efficient. The shaft is, moreover, carried in a sleeve extending from the differential box. The method of suspending the rear springs on collars to take in stresses due to the movements of the carriage body off the frame is interesting, and there are in fact many devices in the F. N. car which repay a close investigation.

To say that the forthcoming show in Paris will prove more interesting than its predecessors is to give expression to a stereotyped phrase which is nevertheless perfectly true in view of the great advance that continues to be made in automobile construction. Its importance will be greatly increased by the fact that several foreign makers will be exhibiting. Two English firms at least will be showing vehicles, the Napier and the Wolseley, and the well known makers, Fiat, of Turin, will also have a stand.

Unfortunately, the new Mercedes cars will not be seen in Paris next month. This is a pity, as the vehicles are said to be extremely interesting, especially in the way of weight reduction, which has enabled the Cannstatt people to build much more powerful cars within the 2,200 pounds limit. They have given up the armored wood frame and are building them of U section steel in one piece. The results are said to be surprising. The new Mercedes will not be seen until the Nice meeting in March next.

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ALCOHOL AND RECORDS

Both Matters of Moment in Paris—Why American Makers Should not Overlook Alcohol.

Paris, Nov. 14.—In connection with the Paris show also there is to be a conference on alcohol, which question continues to occupy a great deal of attention in official circles in France and Germany. Alcohol is a "national product," the use of which the governments are trying to enforce to the exclusion of gasolene, but there are many things to be done before its objections can be overcome.

The chemical drawbacks have first to be tackled in the way of denaturising it and rendering it unfit for human consumption without impairing its efficiency as a fuel, and this is a matter which has hitherto proved an almost insuperable problem for chemists. There is a big prize outstanding for the man who can discover an ingredient which will denaturise alcohol without reducing its calorific power, or causing trouble through the burning of a non-volatile product in the motors, and the inventor of a satisfactory system would find an easy way to build up a big fortune.

Once this difficulty has been overcome, the governments will be confronted with another in the question of price. Unless alcohol can be bought more cheaply than gasolene its future is of course hopeless. In Germany we believe this can be done, but in France the state derives such a huge amount of its revenue from alcohol that it will find it very awkward to reduce the heavy taxation on this spirit, and the only alternative is to put almost prohibitive duties on imported petroleum. No doubt, in course of time, a way will be found of giving a preference to alcohol, though whether by reducing the price of this spirit or increasing the cost of gasolene it is impossible to say. In the latter case it would be a very poor lookout for automobilists.

This is undoubtedly a great question which, when it is solved, will have vast consequences on trade, for it is to be remarked that there are few countries where gasolene can be procured at a reasonably low figure, and if alcohol can successfully replace it, as it already does to a certain extent, an enormous stimulus will be given to the trade in alcohol automobiles in other parts of the world where gasolene is either too expensive or its use is attendant with too many risks.

In India, Africa and other tropical countries the employment of gasolene is out of the question, and now we find Peru trying to find an outlet for its home grown alcohol. Even a country like the United States, which produces petroleum, cannot afford to neglect the alcohol problem in view of the great importance it will have at some time or another upon the foreign trade.

The fall of the year is invariably accompanied with a fall of records, and during the past week the new official course at Dourdan has been the scene of many a remarkable performance. Fournier's exploit over the mile, recounted last week, has been eclipsed by Augières, who drove a Mors of exactly the same type. He reduced the time for the mile to 46 seconds, but he failed to get the kilometre, which still remains to the credit of Fournier. Thellier, on a Passy-Thellier voiturette, annexed the two records for this class of vehicle by covering the mile in 58 seconds and the kilometre in 36 1-5 seconds, and the light carriage records have been secured by Théry on a Decauville, who rode the mile in 48 2-5 seconds and the kilometre in 30 seconds. Other records were as follows: Derny, on a two-cylinder Clément bicycle, kilometre, 39 4-5 seconds and mile, 1:5 2-5; Derny (four-cylinder Clément bicycle), kilometre, 33 1-5 and mile, 53 2-5; Truffault (Truffault voiturette), mile, 40 1-5 seconds; Osmont (De Dion tricycle), kilometre, 33 seconds; Rigal (Buchet tricycle), kilometre, 33 and mile 53 3-5; Oury (Clément voiturette), mile, 1:1 4-5. Several other attempts are to be made while the fine weather lasts, including one by an English car, the Wolseley, to be driven by C. Jarrott.

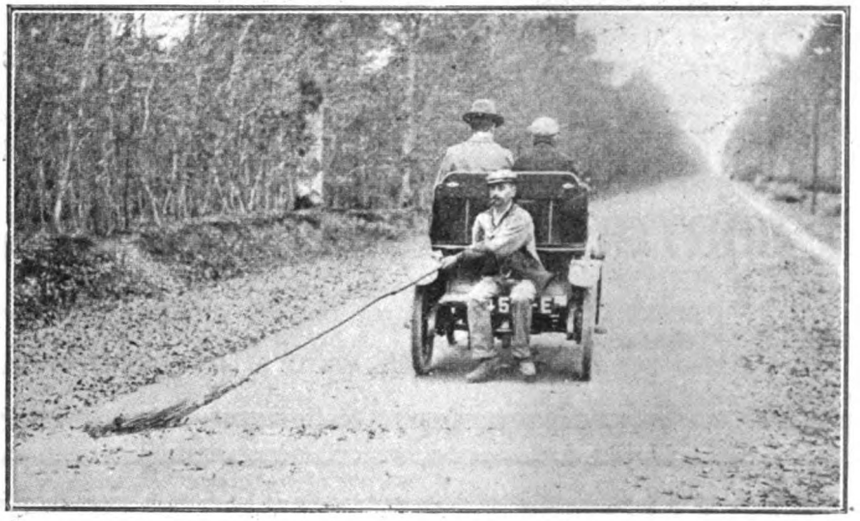
The sporting committee of the A. C. F. are still examining the different electrical timing devices which have been submitted to them, and it is expected that very shortly they will be able to lay down an installation at Dourdan, when, if successful, the human timekeeper will be entirely dispensed with for clocking vehicles over short distances.

The persecution of automobilists for alleged furious driving is bringing joy to the heart of the horse dealer. We clip the following advertisement of a member of this fraternity from one of the leading Paris journals:

"Doctors, stockbrokers and business men: Don't buy automobiles, which are not allowed to travel at more than twelve kilometres an hour in towns. Buy good trotters, which will do the kilometre in two minutes. No limit can be put upon the speed of animal traction."

Therefore, the horse dealers confess that their horses can travel nearly twice as fast as the limit fixed for motor cars. This is a matter upon which the police have always displayed an exaggerated scepticism. They are merely courting accidents by compelling automobilists to travel slower than horses, and it is simply monstrous that the lives of the public should be placed in constant peril through unmanageable horses being driven at the rate of eighteen and a half miles an hour.

THE STRAIGHTAWAY COURSE AT DOURDIN, FRANCE.



SWEEPING THE ROAD FOR A RECORD TRIAL.

French Government Forbids Further Trials.

An interdict has been laid by the French Government on automobile speeding on the Dourdin course, over which the mile and kilometer records were recently broken.

This action on the part of the government has aroused considerable local indignation, as the road is practically unused by ordinary traffic, and the automobile trials had attracted many visitors and greatly increased the trade of the locality.

It is now proposed to lay out a private road, four kilometers long, parallel to the Dourdin road, on the property of the Duchesse d'Uzes.

Bishops to Tour Abroad.

Few Americans tour more enthusiastically and persistently than do Mr. and Mrs. Courtland F. Bishop. During the summer and fall they travelled several thousand miles in their Mercedes car in New England and New York State. They now contemplate a more ambitious flight. They will go to Paris in December, where a new car is being built for Mr. Bishop. After making a run through Southern France they will sail for Algiers, and will spend the winter touring.

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Fostering the Commercial Vehicle.

About a year since we quoted a Western automobilist who narrated how more than a decade ago he had driven a steam threshing machine up and down the hills of his native State, and who, remarking the diffidence of automobile manufacturers in approaching or embracing the self-propelled traffic vehicle, suggested that they might study the steam thresher to their advantage.

It is good news, therefore, that the Contest Committee of the Automobile Club of America is practically of one mind that a contest of business vehicles, as was urged by the Motor World last week, shall form a part of their next year's programme. It may induce automobile makers to "go to the thresher," or will, at least, turn their thoughts and ingenuity in the direction that promises the greatest returns and probably quicken the transferral of blue prints into vehicles.

The trade's attitude toward the subject has long been peculiar. While admitting almost to a man that the future of the industry is bound up in the traffic vehicle and while as conversant with the fact that every man in business, of whatever nature, awaits and holds a warm welcome for the vehicle that will replace and reduce the cost of animal transportation, the automobile trade is as shy as a kittenish girl of grasping the actual manufacture of such vehicles. Generally speaking, what are termed delivery wagons is as far as any of them have ventured and these differ from their pleasure cars mainly or only in body design.

It is high time, therefore, that an effort was made to overcome this timidity and to develop and guide the trade in the direction which it itself admits it should go, but does not go. Public contests, such as the Automobile Club has in view, make for that end and are therefore to be encouraged and applauded.

Lack of Closed Cars.

Although another winter is at hand, if electrics be excepted we are yet without a closed car. The indifference of manufacturers of steam and gasoline vehicles in this regard is almost inexplicable.

Fur and leather but partly serve to keep out the cold; their effect is minimized by chilling rain and accumulated snow, such as are to be expected of the months ahead.

If the motor car is to become an all the year 'round vehicle and not merely a fair weather conveyance, it is time designers turned their wits toward the production of substantial and adequate protection from the elements, of which the penetrating north wind is but one.

The closed car affords practically unlimited scope for originality and invention.

Abate the Nuisance!

One of the most, if not the most offensive, nuisances attendant on automobile shows is the promiscuous and senseless tooting of horns and clanging of bells that have marked the exhibitions of the past.

The practice is not only offensive to the ear and to good manners, but it has added not only the difficulty of conversation but to the conduct of business.

To the testing of a horn or a bell when the sale of either is involved, no criticism can attach, but it is notorious that most of the noise is wanton noise made for the mere sake of noise and that stand attendants contribute as much, if not more, to the nuisance, than the small boy to whom a surreptitious squeezing of a bulb is keen delight.

The suggestion that the nuisance be abated comes to us from one who has exhibited at all previous shows and who expects to exhibit at all future ones; he is not a man whose nerves are "on edge," but he maintains that the indiscriminate noise has interfered with the transaction of his business and his protest is even more emphatic than we can well put in print.

We believe that most exhibitors will agree with him, and if the show management cannot or will not do anything to abate the evil, they could help matters by at least tacit agreement to keep horns and bells out of sight or reach of spectators and by letting fall a few words in the ears of those attendant on their respective exhibits.

How Damage is Done.

Frequent and violent changes of speed are not only unnecessary in many cases, but they impose strains on the entire car that are highly injurious.

If a driver will but stop to think of what takes place when he changes suddenly from his first to his third speed, for example, he will be apt to take pause. Gear wheels mounted on rapidly revolving shafts are separated and others violently brought into mesh. One moment the engine is racing, the shafts and gears revolving with greatly accelerated speed; the next the gears engage, and through the transmission gear the engine is burdened with the load of the entire car and called upon to take up its propulsion at a speed considerably greater than that at which it was going before the change was made.

It is a wonder that the gear wheel teeth do not break off, either before they come fully into mesh or afterward. This peril avoided, the transmission gear feels the shock, and through its long length of shafting, bevel gears and chains it is transferred to the rear wheels, fortunate if it is done without breakage.

No one ever saw a locomotive engineer attempt to start a heavy train at full speed. He opens the throttle little by little, easing up as the pull comes through the couplings and the cars, and only applying full power when the train gets well under way. If he took any other course the couplings, being the weakest link in the chain of parts, would break incontinently, and the fat be in the fire.

None except the most careless or incon-

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siderate operators throw in the clutch and start a car on the high speed suddenly from a standstill. Unless the clutch slipped sufficiently to ease matters something would almost certainly break if they did. In the case of the speed change there could be no such easing. It is metal against metal, and a row of stripped teeth will often register their protest against such treatment.

Of course, an operator learns the knack of making speed changes. He becomes able to "feel" the engaging of the teeth, and to know when they get into mesh smoothly and safely, just as, on the other hand, he intuitively feels the first warnings of anything wrong when making the change. With this knowledge he is able to steer clear of the pitfalls of broken teeth and strained engine and transmission parts.

Ignorance or Bias.

It is a little surprising that the Autocar, in commenting on the reliability contest, should fall into such gross blunders as are revealed in one of its articles.

"A bad defect in the rules, from a reliability point of view, was that any time lost in penalized stops would be counted in the running time," its says. "Thus a car with any speed about it could afford to lose anything up to half its time limit in such stops, and yet arrive at the end of its stage with a clean sheet, so far as obtaining a first-class certificate was concerned. The rule was unquestionably a foolish one, as, from the detailed reports, it seems that nearly every vehicle gave more or less trouble, yet there are about a dozen claimants for the president's cup for having made 'perfect runs.'"

Such egregious errors as are contained in these remarks are attributable either to ignorance or to bias. It is not easy to say which is the more discreditable. If we take ignorance to be the correct solution, which is the more charitable one, we are compelled to admit that more than the usual British denseness is back of it.

If there was one thing emphasized more than another in the contest referred to it was the fact that time lost between the controls was time lost "for keeps." A single penalized stop, even if it were of but a second's duration, destroyed a car's chances to obtain the president's cup. There was no making this up. Five and one-half days of perfect running could not blot out one little slip, nor could any amount of speeding expunge from the record one single falter.

Equally plain was it that the seventeen cars qualifying for the president's cup had really made perfect scores. If "nearly every vehicle" had given "more or less trouble," as the Autocar claims, they could not have made flawless runs nor be numbered among the elect.

Such articles as this only lend color to the belief that our English cousins wilfully close their eyes to the good there is in other countries.

Playing it "Low Down."

The eminently respectable gentlemen who constitute the Long Island "Protective" Association may feel proud of their "good work," but most men will agree that it is "playing it low down" to enforce the four-miles-on-bridges law against a physician bent on saving human life.

The association's hired men—the clam diggers and pickle canners who constitute its "expert" law enforcers—are scarcely to blame. They must make arrests to hold their jobs, and everything not drawn by a horse looks alike to them. It is their respectable employers who are responsible for the jug-handled justice and oppression that maintains and that could not exist did the automobile interests have a defensive organization worthy of the name.

Universal enforcement of the act governing speed on bridges can make the law so odious that "hayseeeds" and "protectors" alike will squeal until their cries reach heaven and the legislature.

Incidentally, the arrest of the Long Island physician suggests how much luckier than a private patient is the unfortunate for whom a public ambulance is called. The ambulance by clanging its gong obtains a clear course and without limit of speeed. But no matter how urgent the call, a physician in his own conveyance must crawl at the legal pace or risk arrest.

Vehicles of Happy Mean.

Automatic devices possess advantages, of course, but they bring with them added responsibilities, greater complexity and, frequently, increased cost. And simplicity is a factor of very considerable importance, as is generally recognized.

As time goes on, and the motor vehicle industry becomes more and more settled, this striving after simplicity will become still more marked. When automobiles are new, and the enthusiasm of their users runs high, it does not make so much difference. Sometimes complexity even commends itself. There is a pleasure in learning the functions of a multiplicity of levers, valves and other parts, and in gratifying it there is much enjoyment to be had. But in the end the feeling is certain to be all the other way.

Even now there is much complaint—largely from the uninitiated, to be sure—of the formidable appearance of the modern car, of the mass of "machinery" it carries, and of the time required to learn to operate it and the skill that is a prime requisite of the expert. That feeling will grow and culminate in a demand for the brushing away of all save the absolutely necessary features of the automobile.

What the motor vehicle user of half a dozen or a dozen years hence will demand is a car with the simplest possible method of control, and as near "fool proof" as anything wrought by human hands can be.

With all this it must be borne in mind that the personal equation is still a very important one. The operator of the vehicle must do his share of the work, else not even the most complacent of engines will be able to deliver it full quota of efficiency.

Consequently, the vehicle that strikes the happy mean, giving the most simple control while at the same time avoiding automatic devices that are likely to get out of order in the hands of careless or incompetent operators, is the one that will most completely fill the bill.

Kelloggism Outdone.

After all, Judge William C. Kellogg, of Yonkers, is not the "whole thing." It will probably pain him to read this from Motoring, of London, about a rival of his in Yorkshire:

"The motor car, which was timed by the policeman, contained four passengers, who all swore that it was proceeding at less than the legal limit.

"They were persons, however, who were not entitled to credence in Yorkshire. One was a mere duke, the second an ordinary bishop, the third an unimportant member of Parliament, and the fourth a Cabinet minister of no particular prominence.

"The policeman, Giles Blunderer, swore that the car was whirling along at a speed of at least forty miles an hour, and the driver was fined £50, with costs of £68.

"The duke, the bishop, the member of Parliament and the Cabinet minister hurried out of Yorkshire before any one could arrest them for perjury."

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Commentary

When the journalistic creator of the "bicycle face" to keep up with the times announced himself as the discoverer of the automobile face, I was not surprised, nor was I pleased, neither of which failures on my part probably ever reached the knowledge of the creator and the discoverer above mentioned. Seriously, I didn't believe there was any such thing—that is, I had never noticed any peculiar appearance of the faces of those who indulged in automobiling. But from a dermatological point of view it appears, however, that the "motor face" is now an advertised fact, since in Sunday's paper this ad. appeared:

"Motor Faces.—Keen autumn winds, dust laden and driven sharply against the skin, play havoc with the complexion. No need to forego the pleasures of the automobile. Goosebury has learned the secret of repairing the ravages of modern life. Daily demonstrations of the new (painless) subcutaneous method of building up sunken noses, rounding out the contour of the bust and filling out wrinkles. Bring your own doctor with you!"

Perhaps it is my unfamiliarity with practitioners of dermatology which makes the foregoing seem rather startling, especially that invitation to "bring your own doctor with you." Can it be that this proclaimed curer of motor face by the subcutaneous method is afraid to take the risk himself and wants to make the patient's physician a particeps criminalis, or is the invitation merely intended as a bluff for those whose credulity is not sufficient to cause them to forget that such things as quacks exist and prosper?

* * *

News item. The Sultan of Sulu never allows more than three chauffeurs to accompany him in the royal automobile, 'cause he hasn't any.

* * *

In the magnitude of their wisdom the city fathers of Kansas City, on the Kaw, have decreed, as a means of determining the ownership of each death-dealing automobile in Kansas City, that henceforth no motor vehicle shall be allowed to use the streets of that city which is not "equipped with at least two lamps, upon the front and sides of which numbers at least four inches high must be painted in red." Just imagine an alderman standing in the path of an oncoming Kansas City scorcher, waiting for him to get near enough for the standee to see what those four-inch numerals on his lamp faces were! Imagine, also, the resulting funeral, in which that particular alderman would play the leading part shortly afterward! Kansas City aldermen are worthy of their office, and they will not suffer in comparison with the best of their kind elsewhere; splendid stupidity is the first essential of an alderman, and the determination to allow no chance to prove his possession of it to escape him, is the second. Beyond these two, the mental possessions of no alderman were ever known to go.

* * *

He laughs best at the ills of his fellow motorists who delays his cachinations until he has safely returned his own vehicle to the establishment where it is cared for.

* * *

Paris has a municipal school wherein those who will are taught the intricacies of automobiling. When the students have mastered the subject from A to Z they are given diplomas setting forth that the holders thereof know all there is to know about an automobile. I'd like to bet that every blooming graduate has to take a mighty thorough postgraduate course in the College of Experience, however, before that Paris diploma of his actually does show he is capable of meeting one-half the requirements of the case.

* * *

When the man in search of a perfect motor attains his ideal, he at once discards it and gets another. Why? Don't know; ask him.

* * *

So we are really going to have a try at that steel road, eh? Well, as every one else seems so much in favor of the idea, I suppose it is up to me to file an objection. From almost the beginning it has been the custom of the motorphobes to characterize an automobile as a locomotive; in fact, the legal title of an automobile in Great Britain is, I believe, "a light road locomotive;" so now, when it comes to running motor vehicles on steel rails their likeness to a locomotive will be almost perfect. Then look out for a new outburst of what the yellows call "popular indignation." These road rails are to be of iron, as I understand it, and if my memory of the old-time iron rail such as the railroads were equipped with before the steel rail came is correct, one of the favorite tricks of an iron rail under usage is to develop into a sort of metal porcupine through the slivers it throws out. Imagine a set of $300 pneumatic tires coming in violent contact with a well splintered iron rail! Then imagine the joy of the nearest repair man and the unholy glee of the not-too-far-distant tire maker. You will not have to imagine what the language or the feelings of the owner will be. You know; so do I.

* * *

When the man who buys a freak vehicle knows he is a fool he knows more than most people give him credit for.

* * *

Wake up an Englishman in the middle of the night and ask him what is the greatest danger his countrymen are subjected to and he will answer you "side-slip." The Lord only knows where and why the Englishman first went daffy on side slip, but certain it is that he is, and for many years has been, an incurable monomaniac upon side slipperyness. According to a universal belief among all Englishmen no one can at any time, or in any conveyance from a wheelbarrow to a four-in-hand, venture upon any street, alley or road anywhere within the confines of the United Kingdom without being in mortal danger from side-slip. What side-slip will not do to the traveler upon any kind of an English road has yet to be thought of; war and pestilence are as the gentle dews from heaven when compared with the deadly side-slip. So it comes as a matter of course that Alfred Harmsworth, the millionaire publisher and owner of a score of motor vehicles, should have felt it obligatory upon him to demand of the Automobile Club of Great Britain that it at once appoint a committee to consider the deadly side slip and to plan for its annihilation. Mr. Harmsworth, like the true Briton that he is, announces that he considers "side slip the one drawback to motoring." To Americans the whole thing seems very closely akin to a tempest in a teapot, but, then, we always were a reckless, thoughtless people, not at all like our careful, deep thinking English cousins, don't you know?

* * *

Advice as to which is the best vehicle, form of power, motor and so forth, can usually be had for nothing, and is often worth less.

* * *

Perhaps it may be the price of coal, or it may be the modesty of the steam heat which my landlord is now supplying me for alleged heating purposes, but whatever it is, I have of late found myself studying very closely the needs and methods of keeping warm. In the course of these studies I have noted that no matter how perfectly equipped the average automobile is in other respects, there is an utter absence of any sort of protection for the driver, which must make rushing through the chill November air at better than a twenty-five-miles-an-hour gait anything but an unalloyed delight. While I can see the danger of using something of a lap-robe order, yet I cannot understand why some such arrangement as the folding doors the hansom cabs have could not be employed to protect the driver from the cold. While perhaps Serpollet's famous Easter Egg was a bit too much in the direction of a covered body, yet it certainly demonstrated that it is quite possible to protect the lower half of the driver's body so as to add not only to his comfort, but to the vehicle's speed and to the cleanliness of both. As it is now, the automobilist as he rushes along unprotected from the biting blast is by no means a thing to be envied; at any rate, if appearances are to be relied upon, he isn't.

* * *

Some men are born to be great in automobiling, some achieve greatness therein and some thrust themselves upon it. It takes all that two-thirds can do, however, to overcome the ill effects of what the remaining one-third does not do.

* * *

A true philosopher never wastes any time arguing the merits of the particular vehicle he favors. He mentally concludes his opponent is a fool and lets it go at that.

THE COMMENTATOR.

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READY FOR EAGLE ROCK

Rain or Shine, the Climb Will Occur Today—The Entries—Hill is a Famous "Rise."

Everything is in readiness for the contest on Eagle Rock Hill, promoted by the Automobile Club of New Jersey and set to be run this (Thursday) morning. Given good weather, it will undoubtedly be a bigger success than the event of last year. The entry list is a notable one, and great sport is certain to result.

In the endeavor to make of its annual contest a classic event the Newark Club has much in its favor. Contests of the sort are all too rare. Public and trade alike will welcome more of them, and in the selection of its date and, even more, its venue, the promoting organization has been very happy. With such an energetic chairman as W. J. Stewart to look after it there is scant danger of the event encountering neglect.

Eagle Rock hill is one of the show places of the Oranges. It is the Mecca of pilgrims, who go thither on foot, on bicycles, in carriages, in automobiles and in trolley cars. Close to beautiful and aristocratic Llewellyn Park, behind the portals of which many of the most costly residences of that favored section are to be found, the hill is reached after traversing many of the fine highways which make the Oranges a paradise of good roads. From its summit a magnificent, an unrivalled, view is obtainable. New York, a dozen miles or more away, is plainly visible on a clear day, and in every direction a panorama of surpassing loveliness enchants the onlooker.

The hill itself is about one and a quarter miles long, with a gradient that runs between 12 and 18½ per cent., the average being 14 per cent. A peculiarity of the ascent is its great regularity. For the major portion of the way it never varies, the sharp rises and corresponding decreases in steepness usually found on long hills being conspicuous by their absence. As the top is approached the rise becomes sharper, while the last hundred yards discounts all that has gone before. A couple of turns add to the difficulty of the ascent at this point.

The surface of the road is nearly always



THE LAST AND STEEPEST TURN.
SHOWING THE SNAKELIKE COURSE

NEAR THE SUMMIT.
THE FOOT OF THE HILL.

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the same—a superfine macadam at all points except the worst rise at the top. There the macadam is loose and rough, and there balks and falters may be looked for, if anywhere. An examination of the hill by the Motor World man a few days ago showed that the usual conditions prevailed this year.

The first contest on the hill was held last election day. W. J. Stewart won in the steam class, making the mile and a quarter in 2 minutes and 42 seconds. In the gasolene class Charles E. Duryea was the winner. His time was 3 minutes 53 seconds. These records are likely to be lowered, as they have been beaten this year in practice.

That the interest in the event has increased greatly is shown by the fact that up to date there are twenty-seven entries, with doubtless a number more to come. Last year there were only thirteen.

As last year, one of the cups offered by the club will be for steam vehicles and the other for gasolene.

That there may be no dispute over times or winners, the club has borrowed from the Automobile Club of America the Mors timing device used by the latter.

For the contest this year the New York and New Jersey Telephone Company has agreed to establish telephone stations at various points on the course, so that the spectators at these points may know just what is going on at the starting and finishing points.

The contest will be held regardless of the weather.

Following is the list of entries: W. J. Stewart, Locomobile; A. P. Smith, Automotor; H. W. Whipple, Packard; R. T. Newton, Locomobile; W. Walter, Walter; I. D. Plank, Oldsmobile; C. E. Duryea, Duryea; C. E. Proctor, Winton; W. J. Stewart, Autocar; Angus Sinclair, Toledo; A. J. Lamme, Long Distance; A. Phelps, Locomobile; Mobile Co. of America, Mobile; Ajax Motor Vehicle Co., Ajax; H. M. Wells, Prescott; L. J. Worth, Oldsmobile; Jonathan Bartley, Stanley; C. Brewster Chapman, Locomobile; C. H. Martin, Stevens-Duryea; Walter Weston, Knoxmobile; G. Paddock, Oldsmobile; R. G. Du Bois, Crestmobile; Prescott Auto Co., Prescott; L. J. Wyckoff, Knoxmobile; R. T. Newton, Autocar, and F. C. Reeve, Oldsmobile; E. A. Fairchild, Knoxmobile; H. C. Cryder, Gasmobile, and H. M. Abdonie, Long Distance.

New York to Boston Without Stop.

Apart from the mere matter of time a Packard car belonging to W. F. Bryant, of Boston, and driven by R. Ross, established a record that is no small plume in the Packard cap—that of completing the 244 miles between New York and Boston without a stop of any kind—or without touching the engine. The elapsed time of the trip was thirteen hours, one hour faster than the trip from Boston down a few days before.

The man with the cheap automobile and the man with no automobile are always sorry for each other.

WILL FIGHT TO A FINISH

So Says Foxhall Keene's Legal Counseller—Grounds Upon Which Appeal Will Be Based.

Steps are being taken to secure a reversal of the sentence against Foxhall P. Keene for illegal speeding, rendered at Oyster Bay, Long Island, last week, as related in these columns. Informal notice of an appeal was lodged with Justice of the Peace Franklin when he imposed a fine of $20 on the accused, and the papers to be laid before the County Court making a formal application are being made out. The grounds for the appeal are that the decision was against the evidence.

"There is not the slightest intention of dropping the matter," said Lawyer Frederick N. Watriss on Tuesday, in reply to the question put by the Motor World man. "On the contrary, we shall fight it to the end.

"Twenty days are allowed us in which to make formal appeal. Within that time the papers will go to the County Court. They will ask that the case be reviewed by the Appellate Division, and the latter will be asked to reverse Justice Franklin's verdict. It may either do this or direct that a new trial be given. The latter is the less probable alternative. If a new trial should be granted, however, it would come before Justice Franklin as before.

"We shall ask for a reversal on the ground that the verdict was against the weight of evidence. The law directs that in a criminal case, as opposed to a civil one, the finding shall be based on evidence that proves the case 'beyond a reasonable doubt.' We shall claim that just the contrary was the case—that evidence was submitted which shook the State's case to its foundations. In spite of that the justice ruled against us.

"There are two grounds upon which we attack the State's evidence. One is the accuracy of the timing. We grant the accuracy of the watches—they were stop watches and have been tested—but we impugn the accuracy of the timers. In pressing this question at the trial we succeeded in confusing the witnesses to such an extent that we are now prepared to also question the assertion that the accused covered a full eighth of a mile in the time stated. Upon these two points, as well as on the proven fact that the car could not run at a speed of more than twenty miles an hour, we shall base our appeal for a reversal."

It will be recalled that Mr. Keene was arrested while driving with Mrs. Keene and a chauffeur in a Renault six horsepower car, on the Jericho pike, charged with having covered one eighth of a mile in 18½ seconds. Evidence was brought to show that the car was so geared and powered that this was an impossibility. The testimony of the professional automobile catchers who made the arrest was believed, however, and the prisoner found guilty.

Scarritt on State Organization.

Having received favorable replies from nearly all the clubs in the State, Secretary Frederick H. Elliott, of the Syracuse Automobile Club, is expected to issue a call this week for a meeting to organize what he terms the "Associated Automobile Clubs of New York." The call will be sent to the officers of every automobile club in the State. It is proposed to maintain permanent headquarters.

As was stated in these columns last week, the principal object of the proposed association is to prevent the passage of unfriendly legislation at Albany this winter. The interests of automobilists in general will also be looked after, of course, but for the present at least the matter of legislation will probably overshadow all others.

As the Syracuse Club is not a member of the American Automobile Association, although it is understood that it will join if the dues of the latter are reduced, the bearing the new association will have on the older and more comprehensive body is naturally an interesting one. With the object of ascertaining how the latter viewed the proposed organization, the Motor World man put the question bluntly to President W. E. Scarritt on Tuesday.

"We have not had any meeting since this matter came up, and consequently cannot be said to view it in any way," was the noncommittal reply.

"The policy of centralization could be carried to almost any length," he went on. "A State association might be able to do good work; so could a city association. But really I have not given the matter any attention.

"Some clubs have shown a disinclination to join the American Automobile Association, apparently actuated by the feeling that the dues were too high. We have called a special meeting for December 9, at which time we will consider a proposition to reduce the dues from $3 to $1 per capita. Judging by the correspondence we have had that step, if taken, should remove the stumbling block.

"It was my idea in the first place to put the dues at $3. I thought the association would need the money. As a matter of fact it has not. I am like that man who said that he was not too proud to admit that he was wrong, consequently I am in favor of cutting the dues down.

"But as to the proposed State association, I prefer not to express an opinion."

The sensational cabled reports of Paris's "automobile police" prove to arise merely from the exploits of one patrolman—Navetat by name—mounted on a motor bicycle. The machine is his personal property, and being a clever machinist he is permitted to use it, the authorities giving him an extra allowance of 10 francs per month for its care and up-keep.

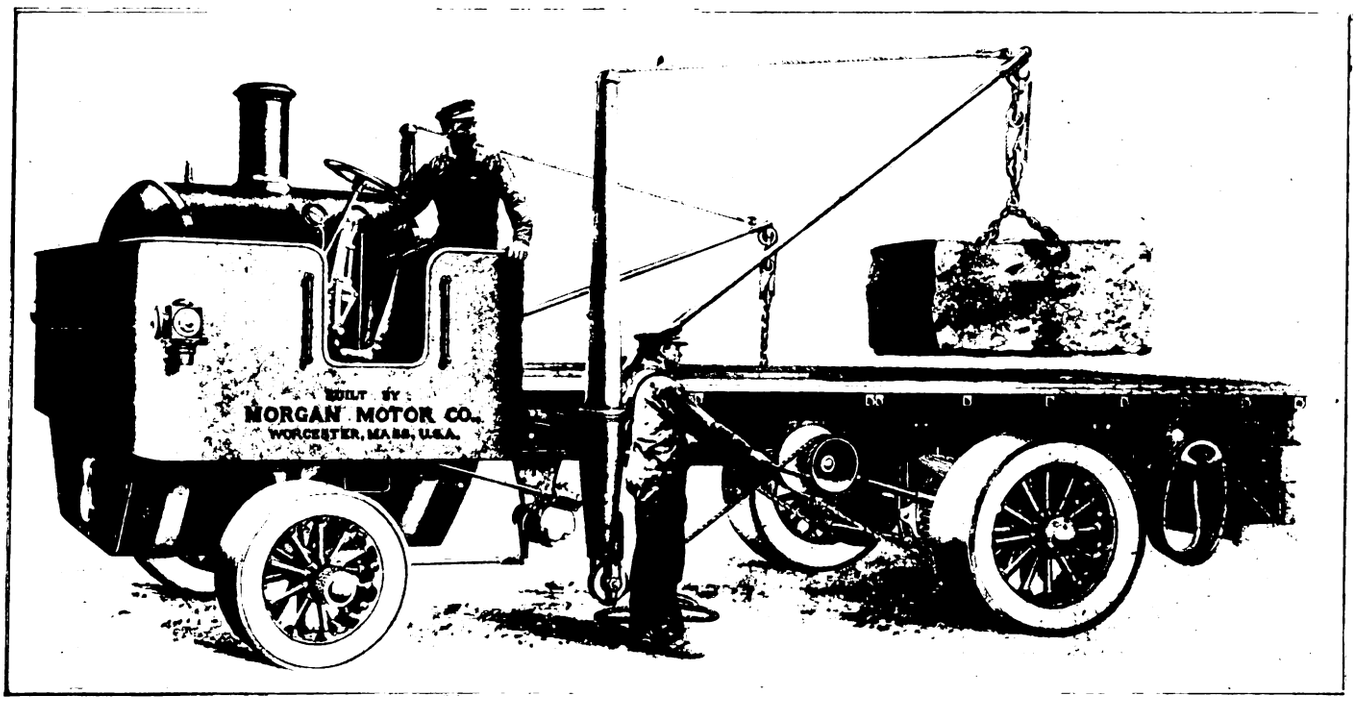
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MORGAN'S STEAM TRUCK

Ten ton Vehicle That Bristles With Original Features—May be Used for Many Purposes.

While others are thinking of building business vehicles and acknowledging that in such automobiles much of the industry rests, the Morgan Motor Company, Worcester, Mass., are among the few who have actually got beyond the "thinking" or blue print stages and are about prepared to market them.

A ten-ton steam truck, here illustrated, is one of the Morgan Company's productions and one in which much ingenuity is centered.



The general dimensions of the truck are as follows: Total length 22 feet 5 inches, total width 7 feet. The loading space is 16 feet 10 inches, and has a total loading area of 118 sq. ft.

What may be called the foundation of the truck is formed of two 9 in. I beams. These are tied together with 3 in. I beams for that part of the frame which carries the loading platform, by two 3 in. channels in front of and 7 in. I beams behind the boiler, and also by the boiler suspension, and two 6 in. deck beams over the rear axle. The frame work is of a design sufficiently heavy to withstand the strains to which it may be subjected.

The boiler is of the water tube type, the design being something like that used aboard torpedo boats. The steam drum and the two mud drums are of extra heavy steel tube, and have at each end large hand holes so that the entire boiler may be easily cleaned. These drums are connected by 1 in. seamless drawn steel tubing, the joints being of a special design, which make the replacement of tubes an easy matter. In case a tube gives out, and there are none on hand for repairs, each opening may be effectually closed by the insertion of a flanged plug. There is a dome above the steam drum which thoroughly dries the steam before it is taken to the engine. The whole is encased in a double steel jacket, with a 1 in. lining of fire felt next to the flame, and a 1 in. porous, asbestos lining between the shells. As a point of convenience, it should be noted that by breaking the steam and water connections and removing four bolts, the entire boiler may be lifted bodily from the truck. The outer shell also is arranged with the idea of making access to the boiler as easy as possible. The boilers are given a cold water test of 600 pounds and also a steam test of 300 pounds. The safety valve, which is a locomotive, muffled pop, is set at 225 pounds. The working pressure is 180 pounds. Water is supplied to the boiler by a power pump geared to the engine, the amount being regulated by the usual bi pass.

Either fuel oil or kerosene may be used for generating the steam. The burners, of which there are two, are easy of access, and may be drawn out together by the disconnecting of a single joint. They may be reached either from the front or from the rear. The oil is not carried under pressure in the tanks, but is forced into the burners by a small pump, which is geared to the machine.

The engine is a double, tandem, compound, with the cranks set at 90 degrees. This type is claimed to be superior to that of the cross compound engine ordinarily used on such machines, particularly in that it is at all times possible to start the truck from a stand and without reversing. The crank shaft and the main gear are formed of a single solid piece of steel. The working parts are enclosed in an oil tight case from which the cylinders are separated by an intermediate frame. This renders it easy to change the piston and valve rod packings and also prevents the steam from passing from the cylinders to the crank case and there condensing. By a special throttle it is possible to admit live steam to the low pressure cylinders, thus very near doubling the power of the engine. From the engine the steam passes to a combined feed water heater and separator. The water of condensation is returned to the water tank and whatever steam may be left passes into an exhaust head of special design in the space over the boiler and is burned up.

The oiling of the various parts of the engine and transmission is taken care of by a small, power pump, oil being drawn from the lowest point of the case and carried through small copper tubes to the various bearings. This system of forced lubrication drives a stream of oil constantly about each bearing, preventing hot boxes and reducing the wear to a minimum.

The transmission gear is also entirely enclosed and runs in a bath of oil. Nothing but spur gears are used throughout the truck. Two ratios of gearing are provided; with one the engine makes ten revolutions to one of the driving wheels, and with the other twenty. The slip gears are on an intermediate shaft between the engine and main sprocket shaft, the compensating gear being on the latter. The engine and transmission gears are in a single case, which is suspended at three points. The cylinder end of the engine is connected to the frame by a pivot joint, and the other two points of suspension are in the ball and socket bearings of the intermediate shaft, which are riveted to the two main I beams. This method of

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suspension prevents any strains in the frame from being communicated to the engine or transmission gear. The power is carried from this shaft to the rear axle by two 5 in. x1½ pitch silent chains. The large sprockets are bolted to drums or quills. One quill is cast onto the rear axle and the other is a running fit upon it. Each quill carries a 5½ in. hub, over which the rear wheel is slipped and made fast. The outer rims of each of these quills form brake drums, upon each of which act two shoes, which are controlled by a small steam cylinder. The brake is very powerful and is double acting. Throughout the transmission the use of keys has been avoided wherever possible.

The entire rear axle construction is especially heavy. It is not in two parts, the quill construction leaving the rear wheels free to act separately. The axle itself revolves in two 5½ in. x11 in. bearings, which in turn support the rear springs. These, and indeed all the exposed bearings on the truck are well protected from dirt.

Special care has been given to the design of a wheel which will withstand the roughest usage. The hubs are very large, and the spokes are of steel. There are two metal tires between which are wood felloes. The rear wheels are fitted with 12 in. steel tires, which gives nearly 2 in. of tire surface for every ton of load carried. The front wheels have 7½ in. tires. The pulling strain of the engine is taken off the rear springs by struts, which are braced against the two 9 in. I beams. The front axle, which is under the center of the boiler, is of 4 in. stock and supports the main frame on pedestals. Helical springs are here used. The pivot axles are of nickel steel.

The oil tank, which holds eighty gallons, is underneath the body of the truck, just back of the boiler. It is made of 3-16 in. sheet steel. Under ordinary circumstances the tank will hold enough to carry the truck from thirty to forty miles. There is a hand hole at the top and an outlet at the bottom so that the tank can be easily cleaned.

The steel water tank is hung at the rear of the truck. It has a capacity of 250 gallons. There are drains on the bottom and a manhole at the top which is large enough to render it easy not only to wash out the tank, but to scrub it with a broom if necessary, or to get inside for painting. The water tank is ordinarily filled by a steam siphon to which is connected a 1½ in. hose. This is always carried with the machine on a convenient bracket. On the front of the water tank is mounted a small duplex steam pump, which may be used to fill the boiler when the engine is standing still.

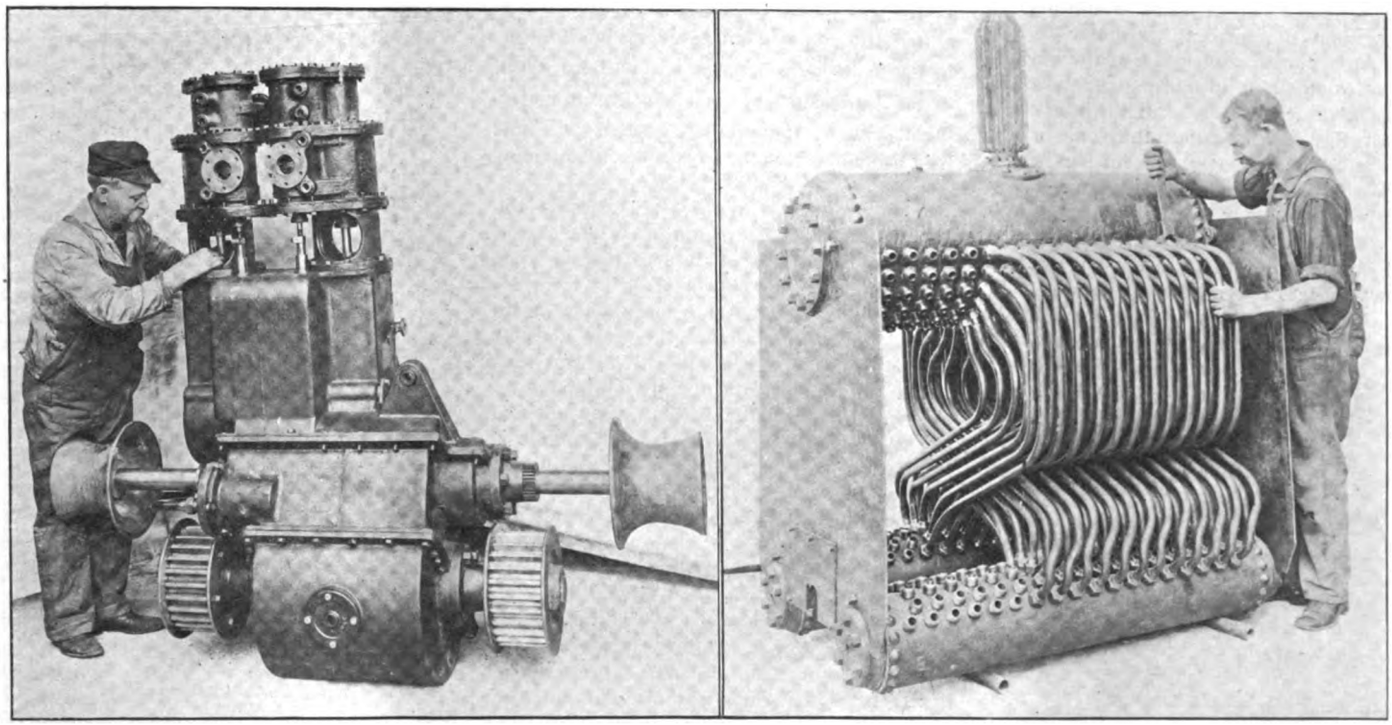
The driver's seat is on the left hand side of the boiler, there being a seat on the opposite side for a helper. In front of the driver are the water gauge glass, which is of the reflex type, and also the valves which control the machine. The throttle is of an entirely new design. It is so made that when the lever is pulled back from the center steam is admitted to the engine; but when the lever is thrown ahead of the center the full boiler pressure is admitted to the brake cylinder before mentioned, and the machine is brought almost immediately to a full stop. If for any reason the brakes should fail to work the engine is amply strong to withstand the strength of reversing under steam.

The valves for admitting steam to the low pressure cylinders and to the steam pump are close to the main throttle lever. Steam may be shut off from all parts of the machine by a main gate valve placed close to the boiler.

It is possible to back the machine down into an excavation and bring it out under its own power. Knowing the general character of the ground in such a place, the truth of this statement may be doubted. The assurance of the possibility of such a feat is, however, not based upon the ability of the truck to pull itself out by tractive power. On each end of the intermediate shaft there is a capstan. It is possible to throw the engine out of gear with the main transmission so that it acts only upon the shaft bearing these capstans. Hawse eyes are provided at the front and at the rear of the machine. By tying one end of a rope to a tree or telegraph pole and bringing it back through the eye to the windlass it is possible to lift the truck out of any kind of a hole, so long as the tree stays in the ground. These windlasses may also be used in connection with jib cranes, of which there is one of two tons capacity on each side of the machine. By the aid of these cranes it will be possible to load the machine in a very few minutes.

There are two items which affect preeminently the cost of trucking; one is the rapidity with which the moving itself may be done, and the other is the time spent in loading and unloading. There is no doubt whatever but that runs may be made more quickly with a motor vehicle than with a horse, but the matter of loading and unloading is something to which little attention has been given.

With the horse drawn vehicle the methods



ENGINE AND BOILER OF THL MORGAN TEN TON TRUCK.

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of mechanical loading are very few, and in every case which has come to notice, the loading mechanism is entirely outside of the vehicle, or is found in a hand winch at the front of the truck. When, however, the work of transportation is to be done by a machine the problem becomes simpler. The two cranes and the capstans have already been mentioned. These will, of course, aid greatly in taking on heavy loads of almost any description where the places of stopping are many. It is possible, however, when regular runs are being made, with two or three regular stopping places, to reduce to a minimum the time that the wheels must stand still. To accomplish this, a system of interchangeable bodies has been carefully worked up, for which a number of broad patents have been granted. The particular system to be installed would depend largely upon the general character of the work. An accurate description of the various systems would take up more space than can here be given; but in general the idea is as follows: Say, for instance, that one of the trucks is to run between two stations; from two to three bodies—and these are very strongly and cheaply built—would be supplied with each truck. At each station slips would be let into the platforms. When the truck backs into one of these slips the body is left upon the platform in such a way that it is possible for the trucks to run out from under. While this body is being loaded the truck can back into a second slip and there pick up a loaded body. This dropping and picking up of the bodies would occupy ordinarily but two minutes, as against anywhere from thirty minutes to an hour or more with the old system. These bodies are of a nominal cost as compared with the original cost of the truck, and by employing them it is possible to at least double the efficiency of the truck, and in that way cut in two the cost per ton of carrying material.

Olds Silence Gossip.

Following the recent New York-Boston reliability contest it was common gossip that the Oldsmobiles, that made such proud records in the run, were special machines built for the occasion. The charge was so freely talked of that the Olds people finally placed the two vehicles at the disposal of the Automobile Club of America for examination by two disinterested experts, and their reports agree that the gossip was without foundation.

These reports, signed by Edward Henry Cox and Richard T. Newton, affirm that the only departures from the stock carriages that could be found were an extra water cooling tank and a different type of mixer, which is now being regularly used.

"The engines have been looked over in detail," says Mr. Cox, "and I can vouchsafe for these two Oldsmobiles being as represented by the contestants. I tested the two and found the engine to be of the same dimensions as to size of cylinder, stroke of piston and cylinder capacity as machines previously sold by these people."

HOLDEN SUES FOR PRIZES

Unpleasant Aftermath of Long Island Club's Race Meet—What Treasurer Webb Says.

Out of the financial failure of the Brighton Beach (N. Y.) race meet in August last has grown what bade fair to become a racing scandal of the first magnitude. Investigation, however, makes it plain that the matter has been distorted and given undue prominence, and that steps are being taken to settle it out of court.

Last week Thomas Holden, Jr., brought suit against the Long Island Automobile Club for $150, alleged to be due him for prizes won at the race meet in question. He stated that he had made every possible effort to collect the money, but without avail. A check for $30 had been sent him in settlement, but he indignantly refused it. Suit was therefore brought to recover the amount due him.

From Frank G. Webb, treasurer of the Long Island Club, to whom the Motor World man went for further information, a very different story was obtained.

"It is true that the club lost money on its meet," he said, "and that the prize account has not yet been entirely settled. But that is not the whole truth. Every dollar due by the club will be paid; in fact, every bill has been paid except those for the prizes, and of these there are just two cups and the prizes won by Holden and H. S. Harkness yet to be accounted for. Mr. Harkness is not uneasy about his money. He gave us the time we asked for, and throughout has been very courteous.

"In Holden's case there is a claim for entry fees to offset his claim. We were willing to pay what we owed him and offered to do so. Now that he has brought suit we have taken legal advice and find that there is one weak point in our case. We should not have waived the entry fee temporarily, as we did. Therefore, in the interest of the sport, and to avoid furthr scandal, we shall make the best settlement with him we can.

"The facts of the matter are these: We obtained from the Holden establishment entries for twelve races, the entrants including Thomas Holden, Jr., who brings the suit; his brother, L. E. Holden; H. A. Marble and others. Of these, the only one to win anything was Thomas Holden, Jr., who won $150. We were perfectly willing to settle with him upon the payment of the fees due us by his people; or to send him a check for the amount due him, less the twelve entry fees. But he wished to settle only for his own fees, three in all, letting the other nine remain unpaid. Naturally this did not seem to us the proper thing to do, and we refused to settle on these terms.

"The amount due for the twelve entries referred to is $120, while the amount won by Thomas Holden, Jr., is but $150. The difference, $30, we offered to pay him, even going so far as to send him a check for the amount, but he refused to accept it.

"As a matter of equity we are entitled to the entire twelve fees, they having all been given us by the Holden establishment and treated by the Holdens as their combined entries. Having made the mistake of accepting these entries without being accompanied with the fees, however, we shall accept the consequences of this act and pay Holden in full, less the $30 for his own fees."

Skinner's Boston-New York Record.

By driving his eight horsepower De Dion car from Boston to this city in 13 hours and 22 minutes, elapsed time, Kenneth A. Skinner last week recovered this coveted record, which he was the first to establish. With only a stop for dinner, he retraced his way, reaching Boston the next afternoon and making the first round trip record between the two cities, his running time being 32 hours and 22 minutes, or 8 minutes better than the time made by Harry Fosdick.

Accompanied by Albert Champion, Skinner left Boston at 3 o'clock on Friday morning and arrived in New York at 4:22 that afternoon. The return journey was begun at 8 o'clock, and during the night the two men suffered much from cold. It was not until Hartford was reached that daylight came, and from there to Springfield bad roads were encountered. Boston was reached, however, without mishap.

Civil Suit City's Recourse.

First blood was scored last week by the New York Transportation Company in its fight against the city police. Magistrate Mayo discharged the five chauffeurs, employes of the company, who were arrested in Central Park, charged with violating the ordinance requiring all public vehicles to take out licenses. The magistrate said he would advise the corporation counsel to bring a civil suit against the defendants.

Mason Acquitted of Manslaughter.

George A. Mason, of Buffalo, N. Y., who was accused more than a year ago of manslaughter, has been completely exonerated. It was shown last week that his striking Samuel Lippman was due to no fault of his. Justice White dismissed the case against Mason.

Now Packard Motor Car Co.

It is no longer the Ohio Automobile Co., the title of the well known Warren concern having been changed to the Packard Motor Car Co. The change is one of name only. The business will be continued just as before.

Changed Their Name.

The Shelby Motor Car Company is the new title of the Beardsley & Hubbs Manufacturing Company, Shelby, O. The change is one of name only.

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COFFEE AND HIS NEW CAR

Virginian Effects a Transformation and Develops Departures in Motor and Other Features.

There is little resemblance between the Coffee gasoline car, which started in the A. C. A. non-stop run in May last, and the smart looking vehicle shown herewith. The latter is a well designed, soundly constructed car, with a motor possessing novel features,



R. W. COFFEE.

otherwise showing little departure from the conventional.

The car is the product of R. W. Coffee & Sons, Richmond, Va. The concern is an old established one, its line being the manufacture of general machinery. Some half a dozen years ago stationary and marine engines were added, and this naturally led to experiments with automobiles, and particularly with such parts as motors, carburetters, transmission gears, etc. The present car is the outgrowth of this, although even it is in a transition state. A number of changes are contemplated, and will probably be found in the company's standard vehicle.

It is the plan of Coffee & Sons to devote a great deal of attention to this department of their business. At the present time they are prepared to accept orders for their motors and carburetters, and in a short time will be similarly situated with regard to a new transmission gear which they are bringing out and to their complete gasoline car.

As will be seen, the present car is a tonneau, of approved type. The Motor World man was given a ride in it last week by Mr. Coffee, and found it to be a smooth running car, simple in its control and operation, and with ample power for any contingencies that might arise. The tonneau body was roomy and comfortable, while the long wheel base and the good sized tires contributed to smooth running.

A single cylinder horizontal motor, centrally located, developing 12 horsepower at 900 revolutions per minute, furnishes the motive power. This motor, called by its makers the "Binate," is of peculiar construction. Two pistons, with the rod of one placed inside the other, travel in opposite directions. The charge is introduced between the two piston heads, and is compressed as they are brought together. The explosion forces them apart, causing the crank of one to pull on the shaft while the other pushes it in the opposite direction, thus neutralizing the shock and causing the car to run with a very noticeable smoothness.

The transmission is of the Upton type, having two speeds forward and a reverse. A roller chain carries the power to a differential on the rear axle, but this is merely a temporary device. In the later vehicles the regulation Panhard transmission—except that the new Coffee gear changing device referred to—will be adopted, and the motor will be of the vertical type, placed forward under a bonnet.

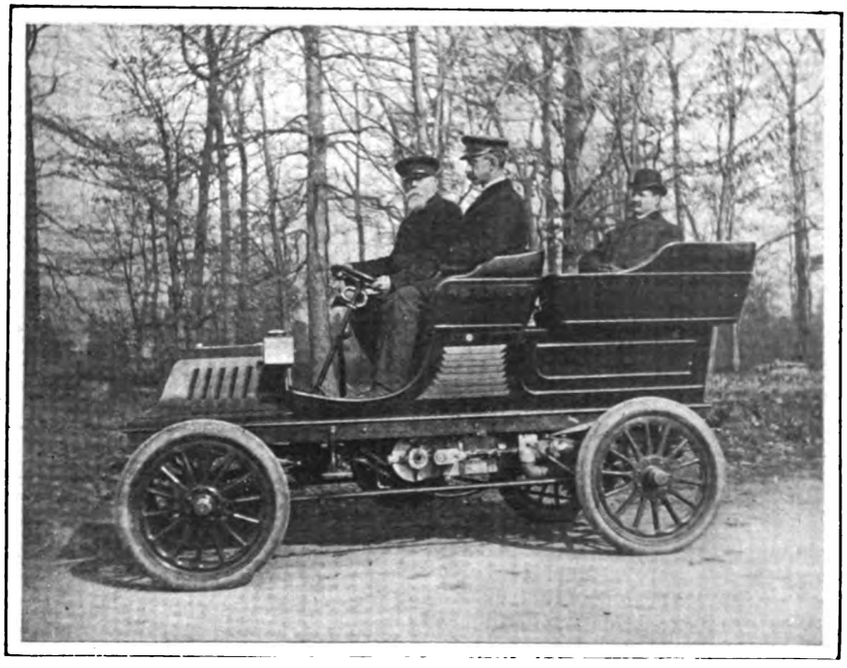
A float feed carburetter of simple design is fitted. A needle valve regulates the supply of gasolene, and once set it need not be adjusted for climatic changes. The motor is water jacketed, the supply being carried under the hood at the front of the car.

Wheel steering is employed, and the method of control is very simple. A foot lever applies the reverse, a hand lever makes the speed changes, and two small levers at the side of the front right hand seat regulate the admission of gas to the explosion chamber and advance or retard the sparking, respectively. The ignition is by magneto, with storage batteries for starting.

The gear changing device referred to is a particularly ingenious piece of mechanism. It is compact, simple and reliable, thoroughly efficient and remarkably free from friction. It has already been shown to manufacturers interested in gears and very favorably commented on. A special push will be made on it by Coffee & Sons, who are represented in this city by Charles E. Miller, 97 Reade street.

A practical man himself, it is not surprising that the senior member of the firm, Mr. R. W. Coffee, should be thoroughly conversant with everything appertaining to the details of automobile construction. Aside from that, however, his personality is interesting. His flowing white beard gives him a patriarchal appearance, and his unhurried speech, which to the initiated stamps him unmistakably as a Southerner, has a "before-the-war" flavor that is as attractive as it is unusual in this busy city.

These are the days, and there are many more of them ahead, when oil gums readily and when the injection of a thimbleful of gasoline to free the piston rings will save many minutes of weary "grinding" in getting the engine going.



COFFEE'S 12 H. P. CAR WITH BINATE MOTOR.

Recent Incorporations.

Houston, Tex.—Hawkins Automobile and Gas Engine Company, with $20,000 capital, to engage in buying and selling automobiles, gasolene and other engines. Incorporators: C. Bender, Jr., A. I. Sallers and George W. Hawkins.

Augusta, Me.—National Automobile Company, with $500,000 capital, to make and deal in automobiles. The officers are: I. L. Fairbanks, president, and J. Berry, treasurer.

Providence, R. I.—People's Rapid Transit Company, with $25,000 capital, to operate a passenger transportation line. Incorporators, John P. Thompson, Jeremiah A. Angell, Herr Prest and Frederick D. Grove.

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His Objections to One-Piece Motors.

Cylinders and cylinder heads cast in one piece is one of the noteworthy tendencies in modern car design. The advantages of this method of construction are manifest as well as manifold, yet arguments on the other side are not lacking.

"It seems to me that it is hardly a wise move to do this," said one man, who makes a car with a vertical engine, in reply to the Motor World man's question. "If the only objection was that it was putting too many eggs in one basket, that would be a weighty one.

"You see, there are so many things to consider. With this construction the difficulty of getting at the parts is enormously increased. You have to take the entire engine to pieces frequently in order to make some minor repair. Then think what happens if anything breaks. Take the rough casting, even. It's hard enough to get castings that will not develop blow holes or other imperfections, and the chances of their going wrong would be vastly increased if the cylinder and head were in one piece. Think what it would cost if the castings were found to be imperfect.

"On the other hand, there's no getting away from the fact that the present method—with the two parts separate—is a satisfactory one when the work is done right. It is not so very difficult to make a tight joint if you know how. For my part, I shall stick to the good old way."

Behrens & Bushnell, Ivoryton, Conn., have fitted up their shop to do automobile repairing.

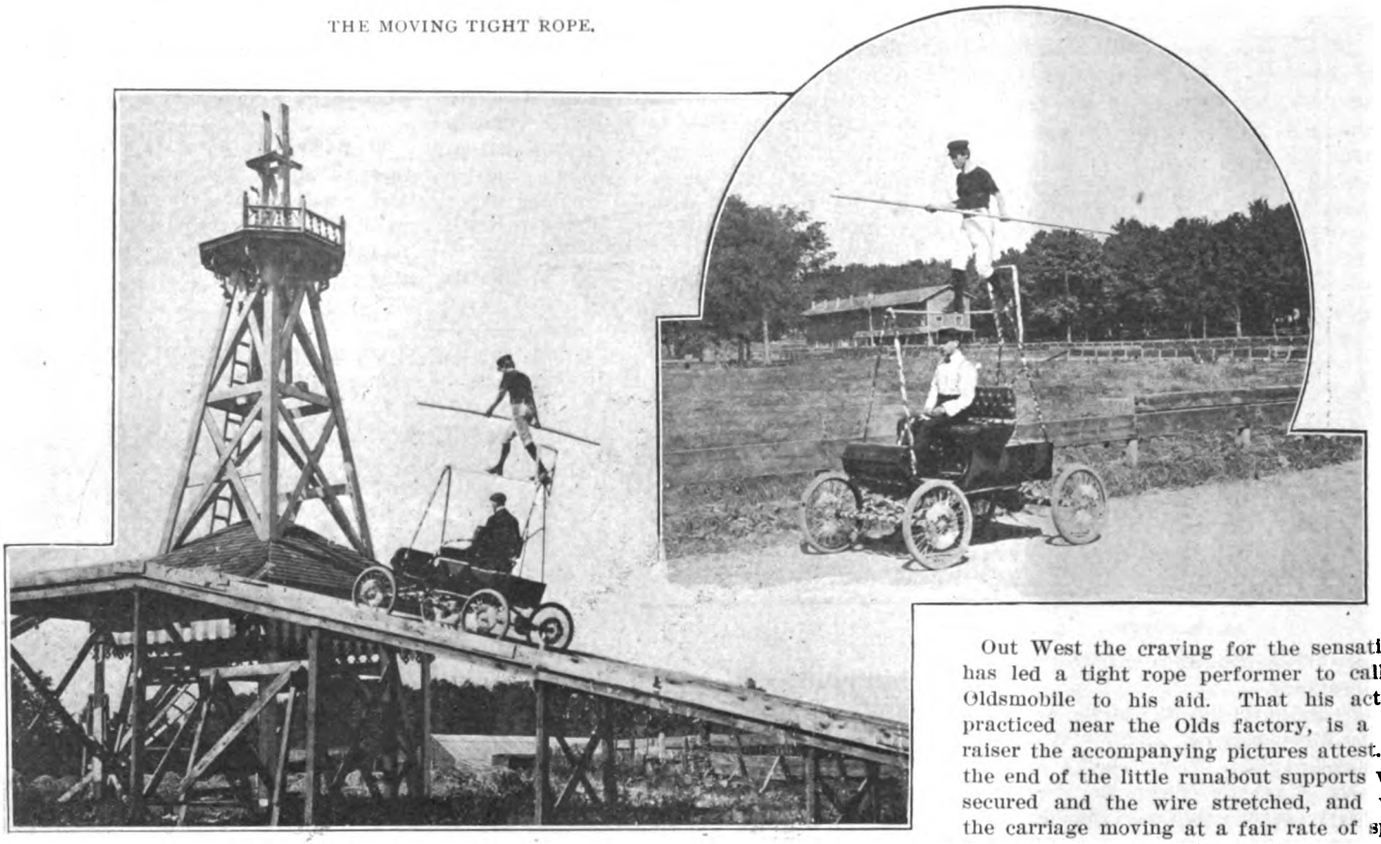
One Year for the "Captain."

In the Court of Special Sessions, New York City, last week, the punishment of "Captain John Pearson" was made to fit his crime. The "Captain" had passed himself off as a brother of President Johnson of the Automobile Club of Great Britain, and on the strength of it had "touched" Secretary Butler of the Automobile Club of America for a $10 loan. Shown to be an impostor, he was sentenced to pay a fine of $10 and undergo one year's imprisonment.

Leggett Elects Officers.

The recently formed J. S. Leggett Manufacturing Company, Syracuse, N. Y., met last week and elected officers and directors to serve for the ensuing year. They are as follows: President and manager, J. S. Leggett; secretary and attorney, Charles W. Tooke; treasurer, William A. Wynkoop. The directors are: Forest G. Weeks, Charles W. Tooke, John S. Leggett, William A. Wynkoop, all of Syracuse, and Edwin R. Redhead, of Fulton.

THE MOVING TIGHT ROPE.



Out West the craving for the sensational has led a tight rope performer to call an Oldsmobile to his aid. That his act, as practiced near the Olds factory, is a hair raiser the accompanying pictures attest. To the end of the little runabout supports were secured and the wire stretched, and with the carriage moving at a fair rate of speed the performer not only walked the rope on a level but also while the machine climbed the 25 per cent grade up which all Oldsmobiles are sent before leaving the factory. It was their quiet running and freedom from vibration that induced the "artist" to select an Olds for his act.

Ravages of Calcium Chloride.

An autoist who uses his car steadily throughout the winter, and is therefore compelled to take precautions against frozen water pipes, etc., had rather a disastrous experience.

"I put in a solution of commercial calcium chloride and water to a specific density of about 1,100," he says. "This effectually cured any freezing, but toward the end of the winter, having occasion to take off the water jacket covers on the cylinders, I found that the whole of the iron or steel studs which secured them to the cylinders had been eaten away, and any parts which had come in contact with malleable iron were also affected. I at once discontinued the calcium chloride solution, and could not recommend any one to use it as a preventive.

"It did not seem to affect the copper pipes or brass fittings at all, or even the castiron, but the action upon the iron or steel was very decided."

December 6 is the date selected by the Long Island Rhode Island Automobile Club for its first "smoke talk."

The Automobile in Society.

In what a local paper describes as "the biggest dancing event Kokomo ever knew," that Indiana town has given the social world a new wrinkle, and one full of suggestive possibilities for those cotillion leaders who are ever seeking the new and novel—nothing less than an automobile-led grand march. The innovation was inaugurated last week on the occasion of the "warming" of the new addition to the Haynes-Apperson factory, which was made a social function, the sensation being created when Mr. and Mrs. Elwood Haynes appeared on the floor in an automobile and skilfully led 119 couples through the mazes of the opening march. The size of the room—300 by 45 feet—easily permitted of the vehicle's manœuvres.

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SEEKS AUTOCAR'S $500

New Yorker Bids for the Prize for a Kerosene Motor and Names His Conditions.

Editor the Motor World:

In your issue of November 13, on page 21A, at the bottom of the centre column, is the statement that "A prize of $500 is offered by the Autocar for a practical and satisfactory device which will enable paraffin (kerosene) to be used on existing cars."

That kerosene oil, the ordinary lamp oil known as astral oil of 150 degrees, has been used for the last four or five years on a cycle motor is an established fact, and one that is well known to motor builders in England as well as in this country. Probably the best known motor using kerosene oil as fuel in England is the Preistmay motors, also the Hornsby-Arkroyed.

In this country we have the latter, built by the De La Vergne R. M. Co., foot of East 138th St., New York City. We also have the Meitz & Weiss engine and the New York kerosene engine, the M. & W. being a two cycle, the latter a four cycle motor.

These all have that one great objection, excess in weight, and for automobiles could not be used. I have recently seen and tested an oil engine that for marine and automobile use is far ahead of any motor or engine on the market.

It seemingly is a peculiar thing that this new engine coincides with that described by Captain C. C. Longbridge in your November 13 issue.

The line drawing of the fore and aft compound gives the following dimensions: 30 inches long and 20 inches wide, 30 inches high, from 800 to 1,000 R. P. M., and weight 500 pounds.

If the Autocar is prepared to pay $500 and to stand the expense of the change from gasolene to paraffin (kerosene oil), I am prepared to make the necessary changes.

The one request that I have to make is that I be allowed to pick out a four cycle vertical motor.

As to my position, would say that I was general manager for the Hirsch Marine Motor Company, who were, I believe, the first to use the horizontal or opposed cylinder type now so popular among the builders of automobile motors; was the first president of the New York Marine Power Company, builders of kerosene oil engines for marine use, and lately have been elected as president of the M. & R. Engineering Company, builders of the Raabe compound internal combustion engine, the M. & N. kerosene oil engine and the M. & N. gasolene engine.

These are built for marine, automobile and industrial uses. Various marine specialties are under way, and will be exhibited at the new offices and salesrooms on or about January 1, 1903.

Am prepared to give a bond, if necessary, to cover the cost of the motor and engine selected for me to make the change from gasolene to kerosene, and motor can be entire American or English design or build.

Trusting this will reach the proper authorities, that an agreement will be drawn binding upon both parties, the Autocar, being a foreign publication, should, however, as an evidence of good faith, deposit the $500, together with a sum deemed necessary for the payment of the necessary changes, material, labor, etc.

Kindly refrain from using my full name.

G. R. W., New York.

Fisk Will Sell Firestones.

Recognizing a constant demand for solid rubber tires, and their factory at Chicopee Falls, Mass., being taxed to the utmost on Fisk bicycle and automobile tires, the Fisk Rubber Co. has completed arrangements to represent, exclusively, the Firestone Tire and Rubber Co. in the cities of Springfield, Syracuse, Buffalo and Detroit, where they have branches, and are prepared to quote prices, deliver and attach the Firestone Side-Wire solid tires.

Their motto is "high grade," and the product of the Fisk factory is never allowed to fall below the highest possible standard. In selecting a solid tire of another make they believe results in the past justify their adopting the Firestone, and can, by handling that tire, not only better meet the varied needs of their customers but also increase their business without sacrificing anything in the pneumatic line.

Disadvantages of Mild Steel Shafts.

For small crankshafts, connecting rods, etc., a rigid steel of high tensile strength—at least 45 to 50 ttons, with even lower phosphorus—is the preferable material. A milder steel retreats before impact, yields and deflects; and it is this repeated deformation that does the damage. This is especially the case where, as in high speed singe-acting explosion engines, the stresses of torsion and bending are so quickly and frequently repeated and reversed. The elastic limit and ultimate tenacity of these higher tensile steels is very much higher than those of milder quality; and as they are rigid and unyielding, there is no deflection to add to the strain of the metal and to wear down the inner sides of the bearings, and thus aggravate the bending tendency.

Benz to Change Transmission.

It is reported that the 1903 Benz cars have undergone a radical transformation, and all the former characteristics of the construction have disappeared. The motor rests vertically in front and the power transmission is by friction direct on the rear axle.

The Benz is a German make, one of the oldest in the motor vehicle field. Horizontal motors and belt drives have been fundamental principles with the company until now, and the complete change referred to is the more notable on that account.

COST OF HAULAGE

Comparisons That go to Show the Economy of Motor Trucks—Costs per ton Mile.

Motor trucks are so few in number that little data bearing on the cost of mileage and maintenance is obtainable. That they will prove a substantial saving over the horse drawn vehicles is of course generally believed, but lacking the figures born of practical usage it is only possible to arrive at estimates, of which that made up by the Morgan Motor Co. is about the most reliable that is available. It certainly does not lack interest, and makes out a good case for the motor driven truck, as the following figures attest:

COST OF HAULAGE BY HORSES.

Four horses, at $200	$800	
Team, at $500	500	
Harnesses, at $50 per horse	200	
Blankets, at $1.50 (two sets)	12	
Stable extras (brushes, harness dressing, etc.)	25	
Cost		$1,537
Depreciation 10 per cent per annum of vehicle	$50	
Depreciation 25 per cent per annum of horses	200	
Depreciation 25 per cent per annum of harnesses	50	
Depreciation 100 per cent per annum of blankets	12	
Depreciation 100 per cent per annum of brushes, etc	25	
Total depreciation		$337.00
Wages		1,300.00
Feed (365 days)		730.00
Shoeing	$350	
Veterinary services	100	
Maintenance of vehicle	75	
Maintenance of harnesses	20	
Total maintenance		$545.00
Interest on investment, at 5 per cent		61.85
Insurance, at 1½ per cent		21.55
Cost to operate		$2,995.40

Assuming that a four horse team travels a total of 15 miles per day, and that a load is supplied only one-half the time, or, in other words, that there are 7½ carrying miles. With a load of seven tons the ton mileage is 52½. This, multiplied by the available days in the year, which may be taken as 275, gives a yearly ton mileage of 14,437. The yearly cost to operate, divided by this figure, gives the cost per ton mile as $0.208.

COST OF HAULAGE BY MOTOR TRUCKS.

Cost	$7,500
Depreciation, at 15 per cent per annum	$1,125
Interest, at 5 per cent	375
Insurance, at 1½ per cent	112
Wages	1,300
Fuel (275 days)	770
Lubricating oil, at 50 cents per day	187
Spirits and waste	50
Maintenance and repairs	300
Cost to operate	$4,219

Assuming in this case that the machine runs 40 miles per day, of which, as above, only one-half the distance is covered with a load, the total ton mileage will be 200. This, multiplied by the 275 days, gives a total ton mileage of 55,000. Dividing the yearly cost to operate by the yearly ton mileage, the cost per ton mile of $0.0767 is obtained.

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AT LAST
A $550 AUTOMOBILE.
"MOBILE"
A RUNABOUT

THIS BRINGS THE AUTOMOBILE FOR PLEASURE AND FOR BUSINESS WITHIN THE REACH OF ALL.

A $1085 Delivery Wagon

(Automatic Water Regulation. No Water-Glass.)

THIS BRINGS THE AUTO-DELIVERY WHERE NO MERCHANT CAN AFFORD TD USE HORSES.

THE "MOBILE" COMPANY OF AMERICA is now equipped to turn out on the largest scale more than twenty kinds of motor cars. The prices here made are such as can only be offered under conditions of large production.

They are equipped with "Mobile" low water alarm, steam air pump, and positive-speed oil pump. The Delivery Wagon uses no water-glass, the regulation of water-level being entirely automatic.

Good Agents wanted for all parts of the country.

The "Mobile" Company of America,

Makers of "THE BEST STEAM CAR IN THE COUNTRY,"

Kingsland Point, Tarrytown-on-Hudson, New York.

N. Y. C. & H. R. R. STATION, PHILIPSE MANOR.

BRANCH HOUSES in San Francisco, Los Angeles, Denver, Chicago, Boston and New York:

Cock's Law Unconstitutional?

A solar plexus blow was struck at the Cocks law on Tuesday, and if the ingenious contention put forth by Attorney Schoonmaker is sustained that malodorous measure will pass into innocuous desuetude.

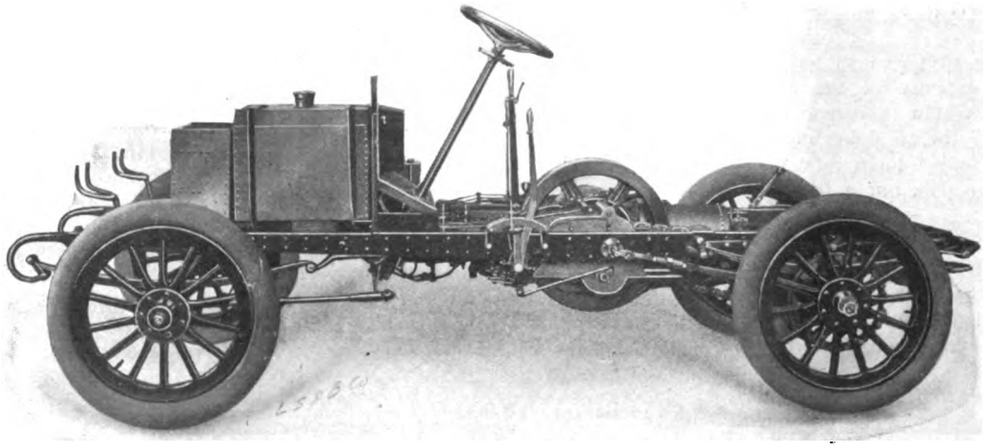
Before the Court of Special Sessions at Jamaica, Long Island, in defending Mason Crocker, chauffeur for Reginald Vanderbilt, who was arrested on October 19 last for violating the speed regulations, Attorney George W. Schoonmaker questioned the constitutionality of the Cocks law.

He said the law was similar to that in regard to cruelty to animals, both being under section 666 of the Penal Code, section 668 of which stipulates that fines shall be paid to the Society for the Prevention of Cruelty to Animals. It was Mr. Schoonmaker's contentiton that it had been held that these fines were public money, and that as such it was unconstitutional to pay them to a private corporation. He declared that fines under the automobile law were subject to the same decision.

The question was argued at some length, and Justice Fleming, who presided, became so impressed with the matter that he adjourned the trial of Crocker until December 9 next, in order that the law on the question might be thoroughly investigated.

At a meeting of the governors of the Automobile Club of America the following new members were elected last Friday: Colgate Hoyt, M. P. Jones, John A. Drake, T. E. Griffin and Frank W. Haskell.

THE NEW STEARNS' IDEA.



CHASSIS 24 H. P. TOURING CAR.

You will note a great many good features that are near and dear to the owner's heart. The completed car combines them all.

Place your orders now, so you will have your car in season.

THE F. B. STEARNS COMPANY, Cleveland, Ohio, U. S. A.

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MOTOR VS. HORSE

Another Comparison of Costs That Redounds to the Credit of the Motor.

Figures showing the comparative costs of keeping horse drawn and motor driven vehicles in commission have been compiled by a tradesman of this city. They confirm the belief entertained that, when a calculation is made of all the items pertaining to upkeep, etc., as well as of first cost, the advantage is all in favor of the motor vehicle.

The cost of a fashionable driving outfit for city use during the winter and spring, for shopping, calling, park use, etc., is found to range from $3,030 to $6,610, as follows: Brougham, $1,200 to $2,000; victoria, $800 to $1,800; two horses, $600 to $2,000; double harness, $300 to $500; single harness, $100 to $250; stable clothing, stable tools, halters, etc., $30 to $60. Total cost, $3,030 to $6,610. The expenses of maintenance for stable, feed, etc., but not including hire of coachman, would be about $100 a month.

A similar motor outfit will cost from $3,800 to $7,500, as follows: Electric brougham, $2,000 to $4,000; electric victoria, $1,800 to $3,500. Total cost, $3,800 to $7,500.

The monthly cost of maintenance, however, not including coachman, should not exceed $70, and in addition the electric outfit is capable of four times the daily mileage of which the best horses would be capable. In other words, a lady could have her carriage every day at the door after breakfast to convey her children to school and her husband to his office, back to the house before 10 a. m. for her to shop, back (after the mistress and coachman have lunched) for calling, receptions and a park drive; back (after the owner's family and coachman have dined) to go to the theatre, supper, and return home about 12 p. m., and yet no exhaustion of the power, no lame horses, and an ability to repeat the performance day in and day out.

The coachman, moreover, has no horses to clean or feed or bed for the night each day; no harness to wash, soap, and polish after each trip (no matter how short); no necessity for going constantly to the farrier and wasting the precious time of his mistress while the horses are being shod, and no good excuse to offer why he should not always be on hand at the request of his employer.

He cannot keep for himself, as his little perquisites, his monthly commissions on feed, stabling or shoeing, nor can he get his percentage on all new horses bought to replace lame or sick ones. He cannot buy sponges, soap, currycombs, brushes, etc., by the score, nor keep his employer's bank account constantly depleted with bills for new harness, new blankets, repairs, etc.

In the case of a light driving outfit for park or suburban use the advantage of the motor vehicle is much greater. The horse outfit will cost from $660 to $1,630, as follows: Buggy or runabout, $250 to $400; horse, $300 to $1,000; harness, $100 to $200; whip, $5 to $10; stable clothing, halter, etc., $5 to $20. Total cost, $660 to $1,630.

The monthly cost of maintenance would be about $40. A steam carriage capable of covering several times the daily mileage of the horse would cost from $600 to $950, or a gasolene runabout from $650 to $1,300, and the monthly cost of maintenance should not exceed $25, giving a considerable advantage in favor of the motor vehicle, not only in operating expenses, but in initial cost as well.

Either of these types of motor vehicles would be capable, moreover, of many times the daily mileage that any horse could possibly perform and remain in serviceable condition for any length of time.



AN OLDSMOBILE IN "FIGHTING TRIM."

Court Holds Garage not a Nuisance.

That a garage or automobile station is not a nuisance is held by Justice Smith, of the Supreme Court of Queens County, N. Y., who ruled on the matter last week in a case before him, as stated in the Motor World.

In his decision Justice Smith says:

"I find that the building of the defendant is not a nuisance, and the business conducted therein is not a nuisance. The action cannot be maintained on the theory that the plaintiff is entitled to a judgment that the building may be removed or its use enjoined for the storing of automobiles, because neither the building nor its use amounts to common law nuisance.

"That the construction and use of the southerly extension of the building do not in itself violate the construction covenant, and that the plaintiff is not entitled to judgment that any portion of the defendant's building be removed, or that the defendant be restrained from conducting the business of storing automobiles therein as at the present time conducted."

The suit was brought by a resident of Arverne, L. I., asking that Lyons be restrained from erecting a building designed for a garage adjoining his house.

A special competition for a noiseless petrol (gasolene) car is to be organized by the technical committee of the Automobile Club of France.

WATCHING THE BRIDGES

Long Island Automobile Baiters Change Tactics —Doctor on Life Saving Mission a Victim.

Another of the hidden iniquities of the iniquitous Cocks law bids fair to rivet attention to it, through the belated enforcement of one of the provisions of the measure.

Four miles an hour is the maximum speed permitted in this State while crossing bridges; but heretofore the clause has been suffered to go unenforced. Consequently no one has been fined or sent to prison for the crime of equalling a slow walk while crossing bridges.

Last week, however, the indefatigable Long Islanders sprung a new game. Automobilists having grown wary, and the crop of victims of the tin can signal apparatus being unusually small, a new field of usefulness was sought and found. An automobilist was arrested for crossing a 15-foot culvert at a greater speed than four miles an hour and fined $25.

As related by one of the victims, the physician, the story is as follows:

"Several weeks ago I was called to make a hurried visit to a very seriously ill child of a family living twenty-eight miles away. Owing to the urgency of the call and the fact that there was no available railroad communication in time, I was conveyed in an automobile by the anxious father of the child. In the course of the journey the father, who was running the machine himself, was most considerate and conscientious in keeping not only 'within the law,' but voluntarily stopped for horses no less than five times. Moreover, when in the neighborhood of Brookhaven, he slowed down to a walking speed, a rate at which I could easily have kept pace with the machine at an ordinary walking pace, and called my attention to special signs warning automobilists to 'cross bridges at four miles an hour,' etc.

"He observed the fairness of such a regulation, and remarked that he always took care not to violate the law.

"While illustrating practically this extraordinary caution and while speaking of the law we crossed a plank culvert about fifteen feet wide, and the moment the wheels left the 'bridge' two men jumped out of the bushes and in true road agent style yelled 'Stop!'

"To our utter amazement they charged us with violating the four-mile regulation, and delayed us the better part of an hour, requiring us to return to the nearest justice—Howell by name—who imposed a fine of $25.

"The anxiety of my friend doubtless prompted him to pay this outrageous fine—much against my inclination, for I am sure it was an injustice added to audacious cruelty in interfering thus in the rendering of urgent medical services. To cap the climax of this peculiar administration of justice (?) we were told that even if we had tried to observe the law conscientiously we were simply unfortunate, as 'the innocent had to suffer for the guilty.'"

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Hail! the Automobile Novel.

There is one thing that is pretty well assured, and that is that whoever begins "The Lightning Conductor" will finish it. The "Conductor" is the most pretentious "automobile novel" that has yet appeared. It is from the joint pens of C. N. and A. M. Williamson, the former an English woman automobilist, and is brought out in this country by Henry Holt & Co., New York.

The book is a panegyric of "motors and motoring," as its authors would put it, linked with a pretty and pleasing love story and an entrancing story of travel through France and Italy.

The automobile part, with one or two slight lapses, is soundly written and with point. If the story does not fire the blood of its readers and give birth to a desire to emulate the doings of the heroine and hero—a pretty American girl and a young Englishman—it will be surprising.

The appended extracts will give an idea of both the style and matter:

"This time, with one turn of the handle, the motor started, so contrary is this strange beast, the automobile. One day you toil at the starting handle half an hour, the next the thing comes to life with a touch, and nobody can explain why.

"Across this vast plain we raced toward Salon along a road straight as if drawn by a ruler, and bordered by small poplars standing shoulder to shoulder like trees in a child's box of toys. We met no other vehicles; we seemed to have the world to ourselves; but once, far along the road, we spied a black dot which seemed to come toward us with incredible speed, growing larger as it came. In less time than it takes to write we saw that it was an enormous racing automobile, probably undergoing a test of speed. We were running at our own highest pace, perhaps forty-five miles an hour; the thing approaching us was coming at seventy or more. You may imagine the rush of air as we passed each other. One glimpse we had of a masked automobilist like a figure of death in an Albert Durer cartoon, or the familiar of a Vehmgericht, and then we were gasping in the vortex of air caused by the speed of the gigantic car. Almost before we could turn our heads it was a black dot again on the horizon. Perhaps it was the great Fournier himself.

"The worst of driving an automobile yourself, when you've really got that microbe in your blood, is that you don't see quite as much of the country as you would otherwise, and that you hate to stop even when there are wonderful things to see."

At all the local garages and other automobile establishments in this city the remarkable way in which the season is keeping up is exciting comment. The chief factor is the weather, of course. As long as it continues fine, and balmy, sunshiny days allure autoists and would-be autoists, no other result could be looked for. Buyers have not altogether disappeared, as a visit to the leading salesrooms will demonstrate.

When Spokes Shrink.

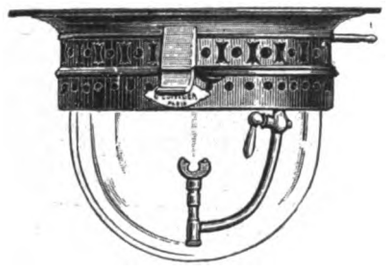
"Do wood wheels shrink and warp?" repeated the dealer who deals extensively in cars so fitted. "They do indeed. Changes of temperature, as well as moisture, affect them considerably.

"But it is not such a difficult matter to put them to rights. Ordinarily it is very simple. If a spoke shrinks a little and begins to rattle, we merely loosen the bolts in the hub and slip a bit of cardboard between the spoke end and the hub. Then we screw the bolts up again, and the job is done. The spoke is tight again and can't rattle.

"This can be done only when the shrinkage is not great, however. Still, we make repairs of this kind every week, sometimes every day. It's a good tip, as we found out long ago."

Hangs From the Roof.

The lighting of automobiles is attracting more and more attention. For broughams and other covered vehicles the peculiarly shaped lamp shown has been designed by a



foreign firm. It is fitted to the roof and connected by copper tubing to a Ducellier generator, which occupies a very small space and can be fixed beneath the driver's seat.

Camaraderie of Automobiling.

"One thing that impresses me strongly about automobiling is the camaraderie that seems to exist everywhere," remarked an autoist to the Motor World man. "The mere fact of being in an automobile is cause for a display of good fellowship.

"The other day I was out on the Pelham Bay Parkway, and, being troubled with a loose clutch, stopped to make an examination. In a few minutes a Winton touring car came along, and instead of going by without a word its driver slowed down, came over toward us and asked if he could be of any assistance. By that time I had recognized Percy Owen, and, returning his salutation, I thanked him and said that we were not in need of help. So he shot down the road and left us.

"It was a little thing, of course, but the spontaneous kindness of it warmed the cockles of my heart. The sight of a car in distress, even though its occupants were unknown, aroused Owen's sympathy, and his first thought was to extend aid. It was but one of many similar cases that have come under my observation."

Hand Pumps on Steamers.

Probably no feature of the steam vehicle has been the subject of more comment or had more fun made of it than its hand pump or pumps. The observer who objected to being billeted to a steam car in the Reliability Contest because he had a weak heart, and was afraid he could not stand the pumping he was expected to do to help the operator out, has come in for lots of fun. In other runs and in races many witticisms have been got off at the expense of this feature.

"The reason is very simple," replied one of the steam car men to whom the query why automatic pumps were not used was put. "We want to keep the vehicle just as simple as we can. It would be very easy to have automatic pumps for the air pressure in the gasolene tank, for example. But we don't think it would be wise to fit them. There would be one more complication added, one more piece of machinery to look after and keep in order.

"We find that operators of motor cars have a preference for the simplest kind of machinery. As it is, they complain that there are too many things to get out of order. It is very easy to give half a dozen strokes of the pump every twenty minutes or so, when the air pressure gets low, and every one knows how to work a hand pump to do this. Or if more water for steam is needed than the normal supply, a little work with another pump will give it, and no thought and little time has to be given to the matter.

"But if this was done automatically the average operator would be having trouble constantly. He would not know enough or care enough to see that the automatic pump was in order, and the first intimation of anything wrong would be given when the device went on strike.

"No, I am firmly convinced that the plan of using hand pumps is best. Then the operator knows just what he has to do, and he does it."

Learns to Scent Out Water.

Much practice makes the operator of a steam car a veritable Sherlock Holmes in the matter of scenting out water. He early learns the importance of divining its presence. Time lost in hunting for it is time wasted.

Once every so often—thirty, forty or fifty miles, as the case may be—the time for filling up arrives. Travelling through familiar country it is plain sailing. Water troughs are to be found at certain places, and it seldom needs a look at the tank to see if the next trough can be reached without filling. But when one's "native heath" is left behind the intuitive faculties must be exercised. The presence of water is felt rather than seen; the "I guess my supply will carry me to the next trough" rarely turns out to be a false prophecy.

The twenty-sixth carload of Oldsmobiles shipped to San Francisco this season reached that city a couple of weeks ago.

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CARE OF CLUTCHES

Some of Their Uses and Abuses—Need of Intelligent Manipulation.

"The modern motor car is designed and built more or less to withstand all ordinary stresses to which it may be subjected under varied conditions and treatment, and generally speaking the reputable cars are reliable enough in all their component parts when handled in an intelligent manner," says an across the water contemporary.

"A common cause of disaster, however, is to be traced to inexperienced handling of the clutch mechanism, by which under stresses are communicated to almost every part of the car.

"How much of this is due to faulty design, and what proportion is due to faulty driving, is not easily computed, but it is at least clear that many drivers rack their cars about most unmercifully by sudden application of the clutch, and bent connecting rods, stripped gear wheels, and other forms of breakdown might, if properly traced be found to have origin in careless clutch handling on the driver's part.

"First, let us consider the action of injudicious application of the clutch.

"The clutch is the connecting link between the vitality of the motor and the 'dead' car, and the car and its load may be anything from ¾ to 2 tons.

"It is, therefore, perfectly clear that if the clutch itself be properly designed to transmit the necessary motion to drive the load, that in the event of the clutch application being too sudden or severe an enormous stress is thrown on the whole of the engine and car parts, and no more certain way of smashing up a car in little time could possibly be devised.

"The makers naturally endeavor to devise a clutch which shall be quick or 'keen' in action and positive in drive, but it is clear that the more powerful the action of the clutch the greater the demand for delicate handling on the part of the driver, yet it is no uncommon thing to see a driver jump his clutch hard on and with the accelerator down, applying the maximum power suddenly, and in all probability checking the car by ramming all the brakes hard on a moment later.

"This, of course, is a showy method of driving, and conveys the impression of immense power and resource, but it is distinctly hard on the car, no matter how well it may be designed and constructed, and it is questionable whether it would not be better to sacrifice something of efficiency in the clutch to save the car—that is, in view of increased number of novices to be found driving powerful cars.

"Let us endeavor to follow the results due to an unduly severe application of the clutch. In the first place, the motion of the engine is suddenly arrested by the resistance of the load, and an enormous stress placed on the connecting rod, crank shaft and bearings of the engine.

"The transmission gear suffers next, and mostly in the gear wheels of the speed change mechanism and the bevel wheel teeth; but supposing all these stand up, then the road wheels take their share of the shock, first by a tendency on the part of the drive of whatever form to tear away the wheel spokes or the hub; but the most fatal results appear at the tires, for with jerky clutch application there must inevitably be a certain amount of skidding and actual surface wear, in addition to the tendency to tear the whole tire from the rim, and the setting up of friction between outer cover and air tube.

"Clutches are of various types and operating in different ways to the same end.

"First of all, there is the broad distinction between metal to metal faced clutches, and metal to leather faced clutches.

"Then in principle of action we have clutches in which an inner drum is caused to expand outwardly and engage with the inner surface of the driving clutch, but the most popular form is the conical clutch with end on motion, in which a male cone is held up to a female cone by a powerful spring, being disengaged by pedal pressure operating a lever, and so overcoming the action of the spring.

"This type of clutch, when in good working order, is probably the most efficient power transmitted, but it is also the one which is most subject to abuse in the hands of inexperienced drivers.

"The acme of perfection in a clutch would be one giving great delicacy of touch, as starting in combination with positive drive when put hard home; in other words, the clutch should be an elastic medium between the engine and the transmission gear.

"The trouble with most clutches is that they either do not fit correctly or the oil has worked between the surfaces, and if we analyze the action of the metal to metal clutch we see that after a certain amount of wear the two surfaces can no longer come into contact right across their face, because of the unequal rate of wear between in the inner and outer diameter, the surface speed, and consequently the frictional wear, being greatest at the outside or point of greatest diameter, so that, although further wear will tend to restore equilibrium in this respect, there will always be less grip on the outer circle; yet this is just where the grip should be greatest to insure an efficient drive.

"With leather lined clutches these conditions do not apply to the same extent, as the leather band, being a pliable medium, is simply compressed to an accommodating fit to the metal cone; on the other hand, the leather lined clutch is apt to be very fierce when new, and to slip altogether when it gets glazed over with oil and metallic particles.

"A little oil of the right kind is a necessity to the leather band, and when new this type of clutch should be dressed with castor or some other vegetable oil, in quantity merely sufficient to render it pliable and amenable to the pressure of the cone, as any excess will merely aggravate matters in the opposite direction by causing the clutch to slip, and so not drive the machine at all.

"Whatever the form of clutch, if it is found to be slipping, through lubricating oil having found its way to the clutch surfaces, the first opportunity should be taken to thoroughly wash it out with petrol.

"If the clutch is found to be slipping through the surfaces not engaging properly there is nothing for it but taking the whole mechanism to pieces and turning up the faulty surfaces, though in the leather lined clutch the job may be done without completely dismantling the mechanism, as if the leather band can be got at a coarse file or rasp may be used to trim the surface to a fit.

"Leather faced clutches, when clumsily handled, are usually more destructive to the car and themselves than metal surfaces, because if the clutch is frequently slipped in on the high speed the leather is charred and loses its nature, by reason of the great heat developed, thus necessitating a renewal of the leather bands.

"Many machines might be much improved by a little more care in adjustment of the clutch spring, as this spring plays a great part in the delicacy of working.

"The plan of treating slipping clutches with resin, chalk, belt compounds, etc., is to be condemned, as the influence on the leather is injurious, and the matter quickly glazes up, leaving the clutch worse than before.

"The three points to watch are good fitting surfaces, clean surfaces, careful adjustment of springs, and an intelligent application of the lever pedal at starting from a standstill, which should always be done at the lowest speed of the car."

Sues for Damage Caused by Dust.

About the most extraordinary charge yet made against an automobilist was that of damaging the furniture of a house by reason of the clouds of dust it kicked up. This was the basis of a civil suit brought at Stamford, Conn., last week by William F. Nettling, of New York, to recover $275 damages from V. N. Beach. Beach and Nettling were neighbors at Shippan, where each has a summer residence. Both men are wealthy, and the suit is said to be more the result of a strained feeling over social matters than the technical trespass.

The plaintiff alleges that on September 5 Beach, his chauffeur and another man unlawfully entered his premises in an automobile, kicking up clouds of dust, which damaged the furnishings of his house.

Beach admitted the trespass, but excused it by saying the wind blew off his hat, and the road was too narrow to turn his big machine about; he drove into Mr. Nettling's driveway to recover the hat, unconscious that there would be any objection.

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Discussed Wheel vs. Lever.

They were partisans. Each saw in his own car the apogee of motorial perfection, and was loath to concede his opponent a single point of excellence, much less superiority. They got around at last to the steering of their respective cars.

"There isn't a man living who can get any speed out of a lever steering car," exclaimed one. "Nothing but a wheel will do at all. Why, a man takes his life in his hands if he attempts to go fast with nothing but a lever to steer with. A few years hence lever steering will be forgotten."

"Stuff and nonsense!" retorted his opponent. "You don't know what you are talking about. Lever steeering is the best there is, and so far from going out it will sooner or later be used on all vehicles except those used for racing purposes."

"I'll wager that I can take my lever-steerer and go where you can't follow me with your 'stemwinder.' We'll go down town, where the traffic is heaviest, and see who will make out the best in getting through it. Why, I could make a figure eight before you could get started to go by a team. It would be the same on rough roads. I could turn out of ruts and holes and forget all about them while you were making up your mind to wind up your alarm. And you know it, too."

"Well, maybe you are a little better at trick driving," admitted the first man," but an automobile is made for other things than to do 'stunts,' and if you want to do a bit of straight driving I'm your man."

Springfield's Sane View.

In the case of the automobile familiarity has bred decided liking. Abuse can permanently harm only when proof is lacking to refute it. Upon the appearance of such proof abuse falls to the ground.

"The people of New England, or at least that part of it through which lay the course of the recent New York-Boston reliability contest," says the Springfield Union, "are not deceived as to the new automobile, which is not a thing of terror, a new sort of bogey which is to turn our city streets and country roads into lurking places of sudden death, but a sane, reasonable and enjoyable sport which, with the improvement in manufacturing and lessening of prices from the present prohibitive limits, will become as much of a necessary luxury as did the bicycle and as, in time, may become the airship."

"Nursing" the Burner.

A sudden shift of wind, or even the emergence from a sheltered place to one more open, will often make the greatest difference in the burner of a steam car. Where formerly it had been impeccable it will take to cutting up "monkey shines" in a way that is aggravating and wellnigh uncontrollable. Care in watching and regulating the burner is the only remedy, and the result will depend largely upon the intelligence with which this is done.

Curious Cause of Stoppage.

A curious case of stoppage recently arose from a cause liable to affect any motor.

The car in question was traveling through very bad weather and awful roads, when it developed a fit of the slows. Stale gasolene, excess of lubricating oil and too rich a mixture were all laid under suspicion in turn, and as the car became slower and sometimes stopped altogether, and was very difficult to restart, successive sparking plugs were taken out and found to be very sooty; but the mysterious feature about the business was that even a perfectly new sparking plug effected no perceptible improvement.

Emptying the crank case and cleaning it with kerosene was equally ineffectual, and when it became obvious that the use of the air lever failed to effect a satisfactory regulation of the mixture, derangement of the carburetter was supposed, but upon complete dissection of the carburetter nothing could be found amiss with it. Yet mile after mile the car got slower, and at last failed to climb the least hill, and was eventually driven at a crawl, which ceased within a hundred yards of its stable.

At last the cause of all the trouble was traced to the fact that first dust, then moisture from the humid atmosphere that prevailed, had combined to form a cake of mud outside the gauze screen upon the end of the air intake pipe, resulting in thrattling the intake and causing such gas as did reach the engine to be too rich.

Where Castings Come From.

Most of the castings for cylinders and other engine parts come from Providence, R. I., where the difficulties incident upon turning out reliable work seem to have been better overcome than elsewhere. These castings are sold by the pound, and are nearly always guaranteed to be free from blow holes and other imperfections. Such guarantee merely means that if imperfections develop the defective casting will be replaced or an allowance made for it, credit being given for the cost. This covers only the rough casting, of course. No allowance is made for the cost of the work expended on it, which may amount to a great many dollars. It often happens that the machinery has been nearly all done and the part is almost ready to be assembled when an imperfection is discovered. Then the casting is worth just so much as scrap iron. With all their experience and skill, casting makers cannot foresee or eliminate these imperfections. By the exercise of the greatest care they are able only to keep them down to a minimum.

A handy article to have around a steam car—or a gasolene one, either—is a portable fire extinguisher, either of the fluid, chemical, or powder style. Many automobilists do not keep fire extinguishers even in their storerooms, and can only witness the total destruction of their vehicles if the gasolene chances to catch fire through carelessness or accident.

Why Some Bodies Lose Lustre.

It not infrequently happens that motor-carriage bodies finished in apparently the most perfect style by the Napoleons of the varnish room soon lose surface lustre or "deaden." The motorist, inexperienced in the ways of varnish and all that pertains thereto, naturally heaps maledictions upon the varnish when loss of gloss manifests itself.

A little investigation, however, should enable him to perceive that if a finishing varnish is possessed of sufficient quality to hold the full brilliancy of its coat to the maximum limit in one instance, it should, other things being equal, do so in another. This being true, it becomes necessary to look to some prior cause for the trouble. Lack of uniformity in methods and mixtures is a prolific cause of the deadening. Moreover, the most approved varnish under the manipulation of some workmen goes to a greasy smear upon the surface, whereas the same varnish, under the magic skill of still other workmen, develops the full strength of a superb brilliancy. The lustre of varnish depends in large degree upon the painter's skill in handling it under the brush.

An insufficiently hard paint fabric is a strong cause of varnish deadening. When time is at a premium in the paint shop, and the general atmosphere of the shop is not equal to the work of oxidizing or hardening the paint as fast as the circumstances of the case suggest, then the process of crowding one coat of paint upon another, at the risk of "lifting," or softening up the preceding coat, is introduced. The direct and logical outcome of the process is "deadening" in all of its various and villainous forms.

Horseman Condemns Horsemen.

It was a driver and not an automobilist who said: "I can't see why the horse papers should not join in the work that the automobilists have begun in trying to get horses reconciled to the motor vehicle. There are a lot of fool drivers who need advice, and they do not get it. I never had a horse shy at an automobile, let alone running away, but I wonder that there are not more runaways because of crazy drivers. No animal feels the agitation of his master more quickly or more keenly than the horse. If the driver gets rattled and excited it makes the horse nervous, and there are hundreds of drivers who lose their heads every time they meet an automobile on the road. I have seen them yell and dance and keep calling 'Whoa!' to a horse that had not shown any disposition to be fractious. If I was a horse in front of such a man I know I would bolt. Some of the horse papers ought to take a say in the matter and pound some horse sense into the drivers, who are more afraid of an automobile than is any horse."

Always strain the water as it is put into the tanks of a steam car; failure to do this sometimes results in the feed pump becoming chocked and failing to act.

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The Week's Patents.

713,568. Non-Active Metal for Use in Storage Batteries. Henry H. Lloyd, Germantown, Penn., assignor to Electric Storage Battery Co., Philadelphia, Penn., a Corporation of New Jersey. Filed June 29, 1900. Serial No. 22,024. (No specimens.)

Claim—1. A non-active metal for use in and in connection with storage batteries and having the qualities of toughness, smoothness, resiliency, and a great mechanical strength in proportion to its weight, said metal comprising lead cast with substantially 12 per cent by weight of antimony and rolled in a cold state, as specified.

713,664. Spring Tire for Vehicle Wheels. James W. Mooring, Dunstable, England. Filed July 12, 1902. Serial No. 115,381. (No model.)

Claim.—1. A self-contained spring tire comprising an expansible and contractible band, means for tightening and locking the same around a rim, an outer ring or tread and springs interposed between the latter and the band, said band being movable circumferentially for expansion and contraction independently of the springs near the tightening and locking device, substantially as described.

713,732. Dust Cap for Vehicle Hubs. Joseph E. Beebe, Harlan, Iowa. Filed March 25, 1902. Serial No. 99,978. (No model.)

Claim.—1. The combination with an axle and hub, of a cup shaped cap inclosing the inner end of the hub and bearing against the shoulder at the inner end of the axle spindle, said cap having a slot in its body portion and opening through its rim by which it is adapted to be fitted on the rectangular portion of the axle, knuckles formed upon opposite sides of said slot having eyes therein, a removable section closing the opening in the rim and a portion of the slot and having a clamping head, the latter having eyes formed therein to register with the eyes of the aforesaid knuckles, and fastenings adapted to pass through the corresponding eyes of the cap and removable section to clamp the inner wall of the head and inner end wall of the slot against opposite sides of the axle, substantially as set forth.

713,736. Process of Manufacturing Rubber. Albert C. Blossier, Paris, France. Filed Feb. 20, 1902. Serial No. 94,903. (No specimens.)

Claim.—1. The process of manufacturing articles of rubber which consists in first softening the pure rubber, then thoroughly incorporating into the said rubber oxid of zinc and oxid of magnesium, in the proportion by weight of about eighty parts of oxid of zinc and forty parts of oxid of magnesium to one hundred parts of pure rubber, then preparing the mass for vulcanization, forming the mass into the desired shape and then vulcanizing the same, substantially as described.

713,752. Vehicle Hub and Spindle. Lucian D. Crandall, Springville, Utah. Filed April 8, 1902. Serial No. 101,875. (No model.)

Claim.—1. In a device of the class described, the combinaiton with a hub and a boxing therefor, of a spindle passing through the boxing, means for preventing displacement of the hub and boxing from the spindle, a cone on the spindle, and a cap on the hub which bears against the cone.

713,786. Metallic Vehicle Wheel. Thomas Midgley, Columbus, Ohio, assignor to the Midgley Manufacturing Company, Columbus, Ohio, a Corporation of Ohio. Filed Sept. 22, 1902. Serial No. 124,461. (No model.)

Claim.—1. A tubular metallic wheel spoke provided with a wedge shaped head having a transverse reinforce therein.

713,792. Explosive Engine. John A. Ostenberg, Westminster Station, Vt., assignor to Frederick M. Gilbert, Walpole, N. H. Filed June 1, 1897. Serial No. 638,941. (No model.)

Claim.—1. In a gas engine, the combination with the cylinder; of an explosion chamber smaller in diameter than the cylinder; an igniting device for exploding a charge admitted to said explosion chamber; an inlet port for the charge and an exhaust port for the products of combustion; means for opening both of said ports when the piston has reached substantially the end of its outstroke, and for closing the same during the instroke of the piston; a source of compressed explosive adapted to be admitted through said inlet upon the opening of the same, and a passage through the piston terminating in an injector nozzle in line with the axis of the cylinder and pointing toward the closed end thereof, whereby the charge admitted is injected in a jet through the spent charge toward the closed end of the cylinder and concentrated in the said explosion chamber, substantially as described.

713,793. Explosive Engine. John A. Ostenberg, San José, Cal., assignor to Frederick M. Gilbert, Walpole, N. H. Original application filed July 14, 1899. Serial No. 723,775. Divided and this application filed Jan. 21, 1901. Serial No. 44,120. (No model.)

Claim.—1. In an explosion engine, the combination with the cylinder of a jacket therefor; a tank of large area and relatively small capacity, the bottom of which is above the top of the cylinder; and communicating passages between said tank and said jacket arranged to set up a natural circulation, substantially as described.

713,855. Pneumatic Tire. George H. Clark, Boston, Mass., assignor to the Clark Cycle Tire Company, Portland, Me., a Corporation of Maine. Filed Oct. 25, 1899. Renewed Aug. 11, 1902. Serial No. 119,224. (No model.)

Claim.—A pneumatic wheel tire comprising a number of expansible layers and two non-extensible strips passing entirely around the tire lengthwise and disposed at opposite sides of the thread of the tire, outside of a diametrical line passing through the tire in parallelism with its axis, substantially as described.

713,860. Exhaust Valve for Internal Combustion Motors. William J. Crossley, Manchester, and James Atkinson, Marple, England. Filed Feb. 15, 1900. Serial No. 5,326. (No model.)

Claim.—1. In an internal combustion engine, in combination, an exhaust valve, a



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piston attached to the exhaust valve, which valve is of somewhat greater diameter than said piston, a removable liner in which the piston works, gas tight, water inlets and outlets to the piston and valve, both of which latter are hollow and adapted to contain water, substantially as described.

713,917. Resilient Spring for Wheeled Vehicles. J hn F. Pope, Chicago, Ill. Filed July 13, 1901. Serial No. 68,241. (No model.)

Claim.—1. In a wheeled vehicle, the combination of veluted springs resiliently supporting a shaft incased in the hub of the vehicle, said shaft bearing or supporting the automobile or motor power of the vehicle, said shaft also bearing or supporting by connecting rods the propelling mechanism acted on by said motor power, said propelling mechanism consisting of revolving cog-wheels and shaft transmitting motion from the said motor power to the wheel of the vehicle, substantially as described.

713,937. Brake Mechanism for Motor Cars. Herbert Austin, Erdington, near Birmingham, England. Filed April 23, 1902. Serial No. 104,408. (No model.)

Claim.—Brake mechanism for a motor car, which comprises brake blocks of opposite sides of the car, a transverse spindle carried in fixed bearings of the car, arms at opposite ends, respectively, of such spindle, which carry the brake blocks, one of said arms being capable of turning upon the spindle and the other fixed thereto, two arms from such spindle, one forming an extension of the arm aforesaid which is capable of turning thereon and the other fixed to the spindle, a compensating lever pivoted at its centre to a part which is moved by the brake handle or motor to put on the brakes, and links connecting the opposite ends of this lever with the ends, respectively, of the second mentioned arms of the spindle, all substantially as set forth.

713,954. Vehicle Bell. John D. Caldwell, Vancouver, Canada. Filed Dec. 17, 1901. Serial No. 86,193. (No model.)

Claim.—1. In a combined speed indicator and alarm, a bracket pivotally attached to the frame of the vehicle adjacent to the tire of one of its wheels; a bell secured to such bracket; a flanged disk or pulley rotatably mounted in axial alinement with the bell, and adjacent to the striking edge; a spring controlled striker connected to the upper surface of the pulley and projecting within the bell; and means whereby the bracket may be moved on its pivot to bring the pulley into frictional contact with the tire or rim of the vehicle wheel in combination with independent means for bringing the striker into ringing contact with the bell, whereby the pulley is rotated and the striker impelled into ringing contact with the bell when a determined speed is attained; or an alarm sounded independently of the centrifugal force of the ringing device.

713,983. Carburetter for Explosive Engines. Lester E. Heath, Saratoga Springs, N. Y., assignor of one-half to Schuyler C. Brown, Saratoga Springs, N. Y. Filed Feb. 24, 1902. Serial No. 95,402. (No model.)

Claim.—1. In a device of the class specified, a box or casing having suction inlet valves for air and hydrocarbon and an outlet for the gas, a revoluble screen open at one end to permit the entrance thereinto of the mingled air and hydrocarbon, the gas outlet communicating with the space outside the screen, and a fan carried by and revoluble with said screen, substantially as specified.

713,998. Wheel. Henry D. Lefebvre, Alpena, Mich. Filed July 29, 1902. Serial No. 117,551. (No model.)

Claim.—1. A tire comprising similar spring members secured at their upper ends to a rim, the free end of each spring being provided with a recess and a projection, the projections on one section engaging the recess in the other, and a tread comprising a ring having edge flanges fitting over the outer ends of the spring members.

714,049. Sparker for Gas Engines. Louis B. Smyser, Newark, N. J., assignor to Ferdinand E. Canda, New York, N. Y. Filed Jan. 29, 1900. Serial No. 3,068. (No model.)

Claim.—1. In an igniter, the combination with a socket for an insulating bushing, and a two part insulating bushing therein having a longitudinal bore for the reception of an electrical conductor, the outer of the sections of said bushing having at its inner end a recess adapted to receive a head of such conductor, of a conductor fitting within said bore and having a head located within said recess, means for clamping the conductor to said outer section, and means for holding the sections of the bushing in place within said socket.

714,080. Exhaust Condenser for Explosive Motors or Engines. Robert Whitson, Auckland, New Zealand. Filed March 20, 1902. Serial No. 99,183. (No model.)

Claim.—In combination with a motor, a jacketed exhaust condenser, a pipe communication between the exhaust outlet of the motor and said condenser, an outlet pipe from the condenser, a discharge box having an opening in its upper portion through which the exhaust pipe of the condenser passes and projects downward into the interior thereof, a water pipe connection between the motor and the condenser jacket, a similar pipe connection between the condenser jacket and the discharge end of the exhaust pipe of the condenser, and an outlet leading from the discharge box at a point above the lower end of the condenser exhaust pipe, whereby the water in the discharge box normally seals said lower end of the condenser exhaust pipe, substantially as described.

714,084. Steam Boiler. William A. Woodeson, Gateshead, England, assignor to himself and Clarke, Chapman and Company, Limited, Gateshead, Durham County, England. Filed April 5, 1902. Serial No. 101,485. (No model.)

Claim.—1. In a water tube steam boiler, the combination of a furnace, a combustion chamber communicating therewith, a series of upright compartments surrounding said combustion chamber and connected alternately top and bottom, a communication between one of said compartments and the combustion chamber, another of said compartments having a smoke outlet, a bundle of water tubes within each of said compartments, water chambers communicating through said tubes, upper and lower tube plates respectively forming the tops and bottoms of the said compartments and the bottoms and tops of said water chambers, as set forth.

TRADE MARKS.

39,268. Certain Named Rubber Goods. Goodyear Rubber Company, New York, N. Y. Filed Oct. 20, 1902.

The word "Chauffeur." Used since October 11, 1902.

39,321. Explosive Gas Engines. John H. Cogswell, Havana, Ill. Filed Oct. 13, 1902.

The words "Red and Ready." Used since July 1, 1902.

39,264. Automobiles. Irvin D. Leugel, Reading, Penn. Filed September 30, 1902.

The word "Meteor." Used since January 17, 1902.

An Opening in Singapore.

Editor of the Motor World:

I trust you will succeed in inducing one of your manufacturers to send me a machine on consignment. I will take good care of it and remit promptly on sale. A French company has several machines here, and have sold three or four out of stock, one for the equivalent of $2,000 gold, to a rich Chinaman, and I understand they have twelve more coming out.

There is only one American machine that I know of in the immediate territory, a steamer, owned by some one up-country. One of the local engineering firms is importing parts of the Albion machine and setting them up here. They sold one the other day for the equivalent of $650 gold. It makes much less noise than the French machines, but is not as noiseless as some of ours. I think the French machines are petrol.

We can get benzine fairly cheap here—about 30 cents gold per gallon, and if it would do as well as gasolene, I should think a machine with the same kind of motor as used in some of the gasolene launches would be just the thing.

Electrical machines could not be used, as we have no public installation from which to draw supplies. Machines should cost from $600 to $900 gold, c. i. f. Singapore, allowing at least 20 per cent discount to be divided between broker and dealer. The Oldsmobile, Locomobile and Rambler are all neat types. A hood like the Spaulding has would go well out here, because rain showers are frequent. See what you can do to interest manufacturers of some simple and cheap machine, and I will do all I can to push it along and also to keep you posted.

The Sultan of Johore, who lives at Johore, fourteen miles from here, has a big machine which he bought in Europe for £1,500.

H. J. M. ELLIS, Singapore, S. S.

The Week's Exports.

Hamburg—4 cases auto vehicles and material, $895.

Liverpool—1 case auto vehicles, $1,035.

London—43 cases motor vehicles and parts, $8,125.

Rotterdam—3 cases motor vehicle parts, $120.

Fat Men Going the Pace.

"The two horsepower car contained four prominent members of the Guilford Fat Men's Club, and was travelling at the rate of three miles a minute," is alleged to be taken from the testimony in an English case for violation of the speed laws. But it must be received with more than one grain of salt.

One Man's Advice.

Car owners who make a practice of carrying a spare set of fully charged batteries should give these an occasional turn and a practice improves the batteries, prevents them from sulphating up and renders them easier and more economical to recharge.

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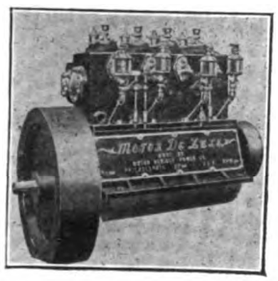
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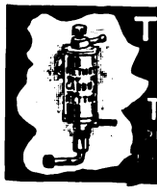
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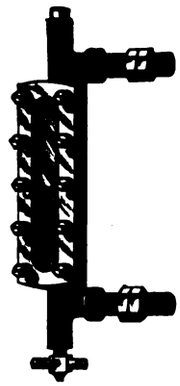


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KLINGER GAUGES.
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Write for prices and particulars.
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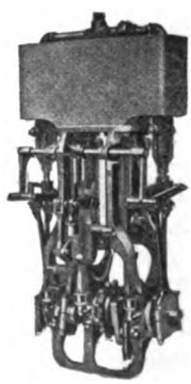


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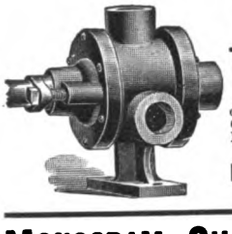
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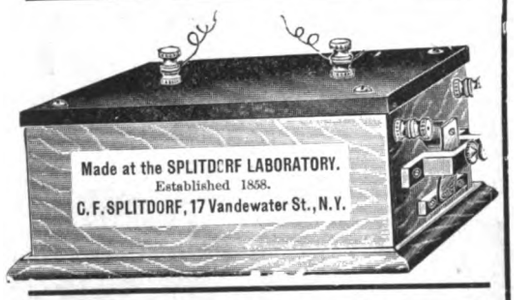
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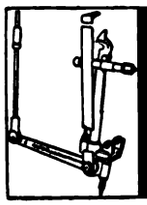
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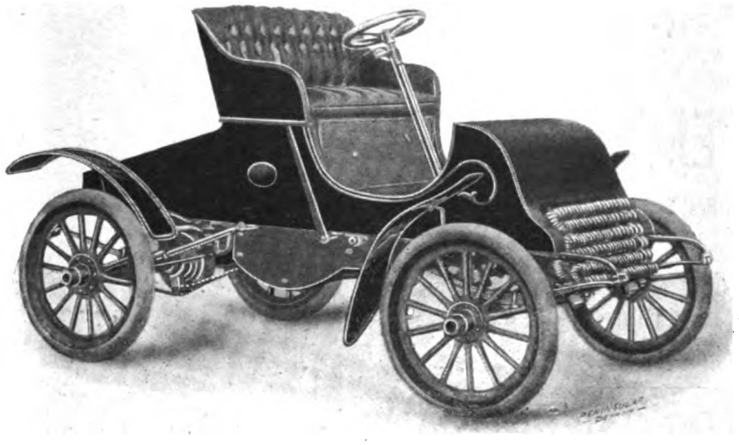
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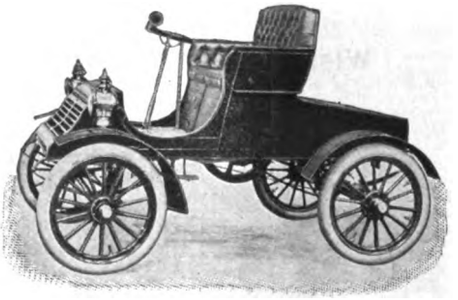
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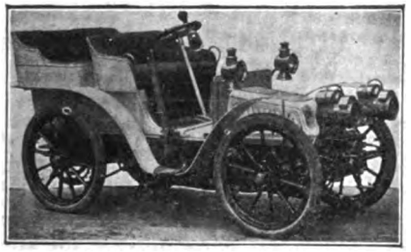
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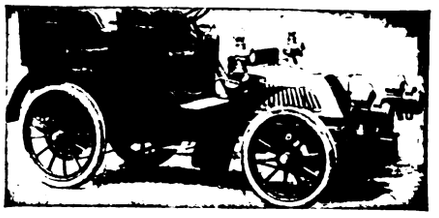
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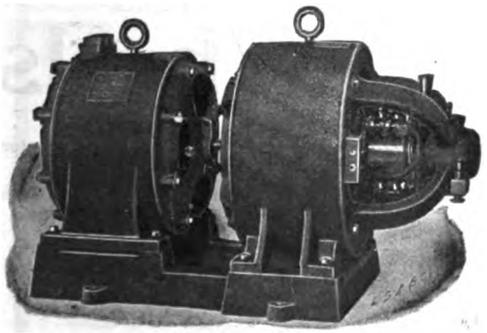
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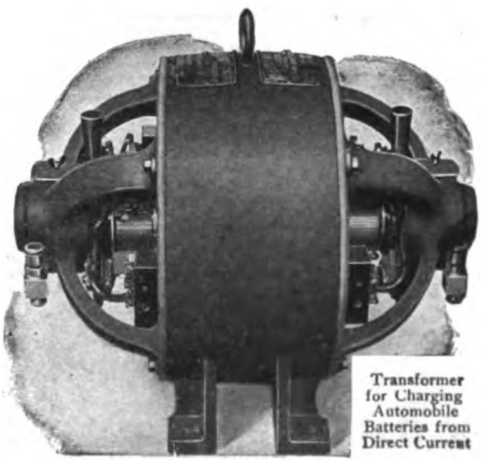
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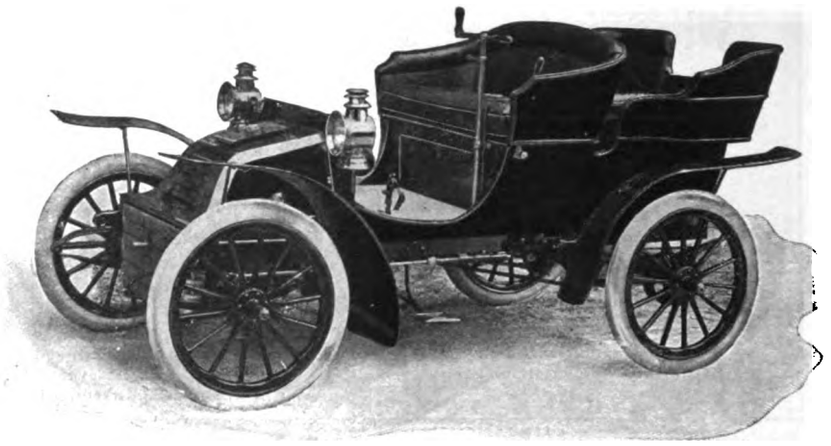
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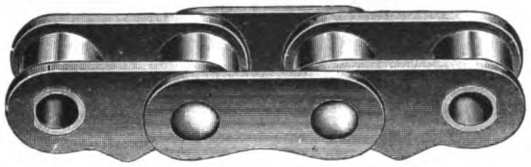
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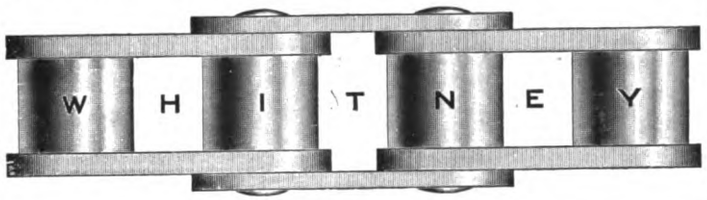
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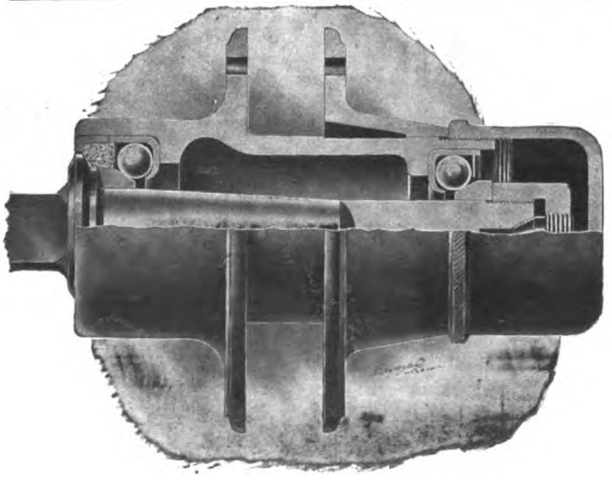
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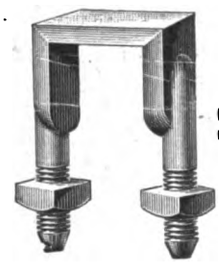
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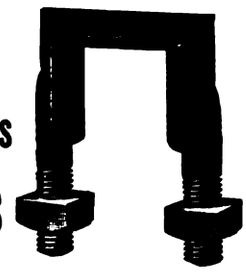
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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, December 4, 1902. No. 10

PRELIMINARIES WON

New York's Aldermanic Law Committee Will Reject Licensing Scheme and Favor Increasing Speed Limit to 10 Miles.

"No license for New York automobiles." A man about City Hall, who knows thoroughly what is going on, says that will be the verdict of the Law Committee of the Board of Aldermen, on the charitable and modest ordinance submitted by the Bright Boy of the League of American Wheelmen as it now is run. The informant of The Motor World said that he was in a position to say positively that the Law Committee would report adversely upon the ordinance offered by J. B. Thompson, who is now representative of the remnant of the great body of wheelmen that a few years ago fought successfully against being discriminated against by tax and license. The informant also repeated an opinion he had heard exprtssed about the wisdom of the mon who drew the ordinance, but that is another subject.

From the same source it is learned that the "rules of the road" ordinance for New York, which, as it stands, provides for a maximum speed of ten miles an hour in the city, will be reported to the Board of Aldermen favorably. There are to be no more hearings on it, and there is known to be a majority of the committee in whose hands it now is who are in favor of granting to New York, with its miles of country roads, a rate of speed two miles less than is allowed in London, where the traffic is much heavier than it is in the Empire City.

It is expected that the ordinance will be passed and then that tne same set of progress hinderers who have been stubbornly opposing it will go before Mayor Low, who runs a machine himself, and tell him that an automobile should not be allowed to travel any faster than a man can walk.

Receiver Appointed for Remington.

As a result of the proceedings brought against the Remington Automobile & Motor Co., Utica, N. Y., as noticed last week, L. N. Southworth has been appointed receiver of the company. He has been bonded in the sum of $10,000.

Judge Ray heard argument in the involuntary bankruptcy proceedings in the United States Court at Utica. The statements of various interested attorneys were to the effect that the company was organized under the laws of New Jersey, and that only 30 per cent of the capital stock had been paid in.

The case was brought up by George E. Dennison, attorney for the petitioning creditors, upon an order to show cause why the temporary injunction obtained a few days ago to restrain a sale should not be made permanent. John H. Grant, who appeared for a number of judgment creditors, opposed on the ground that only 30 per cent of the capital stock had been paid in and he did not want the court to restrain so that creditors could not bring suits to recover. He said the stockholders were liable only after judgments had been obtained against the company, and he asked to be allowed to proceed with the securing of the judgments. Charles G. Irish also objected to the continuation of the injunction.

The assets of the company are about $47,000 and the liabilities about $48,000.

Will Remove to New York.

The Post & Lester Co., the well known New England automobile supply house, will shortly leave Hartford and establish itself in New-York. Quarters in this city are now being sought, and the removal will probably be effected by the first of the year.

In confirming the report Mr. Post added suggestively:

"And we'll have goods in stock, too, so that people can get them when they call for them."

The Bateses Open in Boston.

Bates Brothers have opened a store at No. 145 Columbus avenue, Boston, Mass., and will handle the product of the St. Louis Motor Carriage Co. as a leader.

CLEMENT TO MANUFACTURE HERE

Famous French Maker has Option on Hartford Plant and is Himself Coming Over.

The only foreign makers who will directly exhibit their cars at the Madison Square Garden show are Clement & Co., of Paris. Immediately after the close of the Paris show they will forward the exhibit to this country. Mr. Clement himself will accompany the goods.

Back of this move are, however, intentions of much greater magnitude, nothing less, indeed, than the manufacture of Clement gasolene cars in America.

The matter has been definitely decided, and an option on a plant in Hartford, Conn., has been already secured. The Clement bicycle motor is being manufactured in that city, but the same factory will not be employed in the production of the cars.

W. G. Allen, of Hartford, is representing the Clement interests in this country, and is attending to the details of the project.

Willis Adds Automobiles.

E. J. Willis, who for many years has conducted one of the most aggressive cycle jobbing establishments in this city, has branched into the automobile trade, and promises to make himself felt. He has leased the building at No. 8 Park Place, where he will carry an extensive line of cars and automobile supplies of all kind

Fire Cripples Wheeler.

The plant of the Wheeler Mfg. Co., Detroit, Mich., which manufactures a number of automobile specialties, was partially destroyed by fire on the morning of November 26. A loss of about $15,000 was entailed, but the concern does not expect to be seriously interfered with.

Minneapolis's Newest Store.

The Pence Automobile Co., No. 836 Lumber Exchange, Minneapolis, Minn., is the latest addition to the Flour City's automobile contingent, a large store having been just opened by it. Henry E. Pence is in this city on business connected with the new concern.

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UTILIZES THE EXHAUST

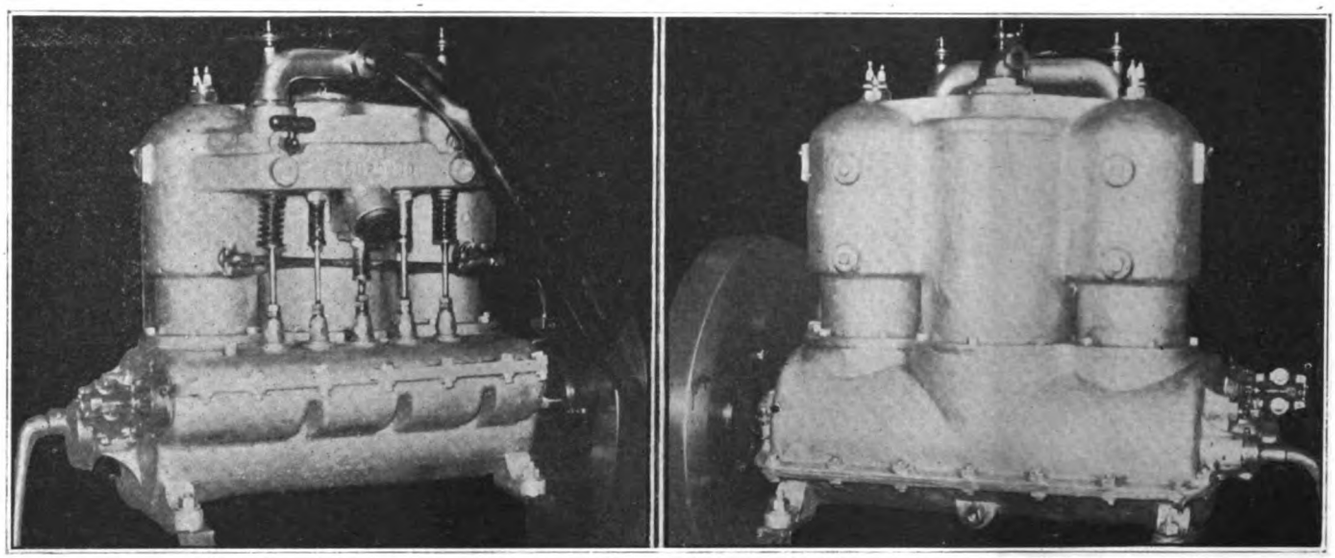
Here's a Remarkable Compound Gas Engine That Gives Every Evidence of Having Solved the Problem—Horse Power Increased Nearly One-third.

The gasolene motor being a heat engine, it has been the regret of many who have had its advance at heart that the heat units wasted in the direct exhaust could not be utilized to give power and to balance the uneven thrust on the crank shaft, much as is done on steam engines. Because of this there have been attempts at compound gas engines, but the long list of failures has raised a doubt hard to eradicate, and created a disbelief if not a positive faith that the thing cannot be done.

With a knowledge of this and influenced by it, a Motor World man, when invited to inspect a compound gasolene motor invented by Messrs. Graham & Fox, of this city, took the assignment confessing to much skepticism. The added confession should be made that where he went to scoff he remained to praise. Whatever had been the faults with other compound gas engines, faults which consigned them to scrap heaps and that have left a consequent impression, they were not verified in the Graham & Fox motor, even after extensive test and trial. It developed its power and did it with so quiet a running that it seemed little short of marvelous. It also made it easy to believe that a motor of this construction, but of smaller size, which is used on a vehicle claimed to have been run 18,000 miles, hardly required a muffler.

This quiet running was noted in two directions. First the motor was merely bolted to two 2-inch blocks, raising the motor about ten inches from the floor, and was only stayed in place by four small rods reaching to the floor. The lack of vibration made these all that was necessary to hold the motor in place. The second feature in this matter was that no muffler was used, the exhaust being piped out through a window. In the room the exhaust was not noticed. Wondering at this, the pipe was traced to its outlet, and here was heard a quiet puff, puff, in place of the usual staccato report which comes from non-muffled gas engines.

Of course, with so momentous a departure, details of construction became important. Unfortunately all of them cannot be given, owing to patent considerations. The motor shown has two explosive cylinders and one non-explosive cylinder, all in line, with latter placed between the former. This means that there are two high pressure and one low pressure cylinders. The former are water jacketed, the latter is not. The high pressure cylinders are 5x5 bore and stroke, the low pressure cylinder 7½-inch bore. All three cylinders, together with the valve housings and gas passages, are cast in one, there being no joints of any kind. There is, of course, but one exhaust opening. This is in the centre of the cross passage of the parts, and projects out and down to give a free exhaust. It is a feature of this exhaust opening that back of the diagonal stub pipe and forming part of it, is a box-shaped cavity, the purpose of which will be explained later.



The cylinders are bolted to the top half of the crank casing. This casing is in two parts, with the split on a diagonal line and running the length of the case An extension of the case incloses all the cams and gears, in keeping with the very latest construction. This, together with struts, give more than the average bearing surfaces. The crank pins for the high pressure cylinders are parallel, with the crankpin for the low pressure cylinder set at 180 degrees.

An examination of the front view of the motor will disclose five valve stems. The central stem is that of the exhaust puppet. The two outside stems are those which are known on the usual form cycle motor as the exhaust poppets. Between the two outside stems and the central exhaust stem are the stems of two other poppets. It is these two poppets which, in a large measure, mark the success of the inventors in overcoming previous failures in compounding gas motors. They are, however, only a part of the whole in this matter, there being other features, such as the proportion of the passages from the high pressure cylinder to the low pressure cylinder, which cannot be detailed at the present writing.

The action of the double high pressure exhaust poppets is interesting. The tuning of the outer valve is usual with that of the four cycle motor, but the tuning of the valve between this and the real exhaust valve is set so that it opens just before outer valve and closes exactly with it. During this time the central valve, the actual exhaust valve, is closed, so that the exploded gases pass to the low pressure cylinder, where they continue that explosion which in all other motors takes place, partly in the muffler, partly in the pipes and the balance out in the air. In none of which places is it effective, and in the case of the muffler setting up more or less back pressure against the motor itself.

In addition to the recognition that the gas engine did not get all the power possible from the heat units generated by the firing, because the exploded charge was expelled at a high heat, it has also been appreciated that if a muffler of ample enough proportions could be built, to carry the charge until it was down to atmospheric temperature, then there would be no noise from the exhaust.

That is largely what taken place in the Graham & Fox compound motor. The centre cylinder in doing its work reduces the expansion to a point where the charge is at almost atmospheric pressure as it leaves the cylinder to pass into the final exhaust. Of course, it is of the highest importance that this reduction be not carried too far, and it is one of the features that assist in the so marked success of this motor, that

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the proportions of this unjacketed low-pressure cylinder are understood to a nicety.

There was mentioned above, a boxlike back to the diagonal exhaust pope. The purposes of this are in keeping with the whole. This part of the exhaust passage has for its back the wall of the low pressure cylinder, and extending through it are slotted parts, as on a two-cycle motor, that are uncovered by the descent of the piston. In fact, this central cylinder is a two-cycle affair, refined by having the slotted parts and a poppet which lifts at every revolution of the crankshaft. That is, the central stem of the five works twice while each of the other two sets are working once. This combination gives instant clearance and prevents wire drawing, a fact which was amply proved from indicator card diagrams made from both high pressure cylinders and from the low pressure cylinder. The effect on the exhaust from the standpoint of noise has been mentioned. Running the motor for some time at over-speed proved that without a muffler the exhaust was as quiet as any muffler equipped vehicle that is met in a day's travels.

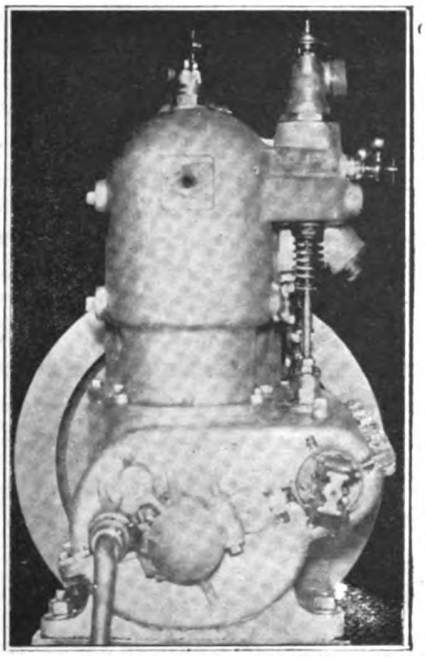
The inlet valves are in the position customary with automatic intakes, and are equipped to throttle or regulate the charge ofr varying speeds. Of course, in the vehicles with which this motor is to be equipped there will be change speed gears. But with so flexible a motor the inventors believe in using the gears less and the throttle more, thus doing away with one of the chiefest nuisances in too many vehicles of to-day; cutting out the motor every little while and changing the relation of the speed gears almost as often. The throttling is accomplished as follows: On each intake valve is a threaded disk, these disk being connected by a simple means. By rotating these disks the amount of gas admitted can be regulated by giving more or less drop to the inlet poppet.

The speed regulation of the motor being controlled by the inlet valve, the spark cam is made self regulating. To do this a ball governor is used. The cam which trips the contact blade is made so that it can slide back and forth on the shaft of the secondary tuning gear. This cam has an outer groove into which project fingers from the toggle arms of the governors. In its sliding engagement with the shaft the cam moves on a cam featherway. When the motor is running, the cam is held in proper sparking position by the governor.

Should there at any time be a tendency to race, the governor moves the cam outwardly on its spiral featherway, thus retarding the spark. As the motor comes down to normal speed the governor moves the cam back to correct position. Good sparking in the cylinder is taken care of by using the Roche two-pole plug.

After inspecting the principle of the motor it was of interest to know something about actual performance, and this was arrived at by using the prong brake. The first test was made with the motor compounded, using the three cylinders, two high pressure and one low pressure. Radius of brake, 46 inches. Revolutions per minute, 720. Pull on scales, 25 pounds. Giving a net of 13.1 horsepower. The second test was made with the low pressure cylinder cut out, so that the two high pressure cylinders only were doing the work. The revolutions were the same; the pull on the scales was 17 pounds. This gave a net of 8.9 horsepower. This showed a gain in power by the use of the low pressure cylinder of nearly 4.7 per cent., the consumption of fuel being the same in each test. The work done in moving the centre piston was shown by indicator cards to be offset by compression against this piston return stroke. It was negligible, being 1-150 horsepower.

It will be noted from the revolutions that



the motor was run at a comparatively slow speed. This, together with the unusual facilities offered by the makers for testing their claims, were matters that could not fail to impress the representative of this journal. Too often it has been found that horsepower claims were one thing, and inclination to furnish means to prove them another.

Careful examination of the motor in whole and in detail showed a well studied and designed piece of machinery, and only added to the favorable impression made by the tests. With these points in mind it is interesting to know the specific claims made by the inventors. In general, the points claimed are an engine of only three cylinders, two of which are explosive, giving an impulse on the crankshaft every half revolution, the same as a four-cylinder ordinary motor when each is an explosive cylinder. This latter is therefore considered in comparison in the following.

The simplifying of parts, as compared with an ordinary motor giving the same number of power impulses per revolution of crankshaft.

Gain in centre or low pressure cylinder from the following. Twice the number of impulses on one cylinder. A cylinder, with no spark plug or explosion impact; with no waste or clearance space; of comparatively even and without very high pressure at any part of stroke; in which an excess of lubricating oil can do no damage; without water jacket and consequent loss of heat; low pressure with two methods of exhaust, one of which is opened by piston at low point of stroke and the other, a poppet, opened at extreme top of cylinder, allowing all gases to exhaust as the piston passes upward, closing at upper end of stroke.

A piston which by its extra weight and number of impulses balances the two explosion pistons, which reciprocate in the opposite direction.

The comparison of fuel consumption has the following claims. Only two charges drawn into cylinders for every four impulses on crankshaft, as compared to four charges in ordinary type. The more perfect combustion of fuel on account of the additional time the charge is held confined by the centre cylinder. Exhausting the gases from centre cylinder to atmosphere at a pressure of only from 20 to 25 pounds, as compared to exhausting at from 60 to 80 pounds. The saving in loss of heat in cooling water on account of the absorption of heat by the expansion of charge in centre cylinder. The reduced necessity of muffling the exhaust because of the low pressure at which it is discharged from centre cylinder.

It is well known that the time of firing the charge of an explosion motor, as related to the movement of piston or revolution of crankshaft, varies directly as the speed. In the Graham & Fox compound, when the motor is running very slowly the contact by sparker is made when piston reaches the extreme upward end of stroke or when crank is passing centre. This point is, however, carried forward as speed of motor increases, and may reach 90 per cent. ahead of the one named above. This is accomplished automatically by the described ball governor and spiral cam, advancing the spark positively and in direct proportion to speed of motor.

Cooling water is saved, as only two cylinders require it. There is cooling of only one explosion per revolution of crankshaft, as compared to two. This allaws twice the length of time for the same number of heat units to be carried off.

Limiting the opening of the inlet valve, to control the speed, gives a saving in fuel in direct proportion to speed at which motor is run and consequent power developed.

Recent Incorporations.

New York, N. Y.—American Dry Battery Co., with $2,000 capital. Directors J. R. Colburn, L. A. Merrill and F. J. Byrne.

Portland, Me.—Baker Long Distance Auto. Co., with $150,000 capital. Incorporators—E. E. Baker, J. F. Fullam and L. H. Abrams.

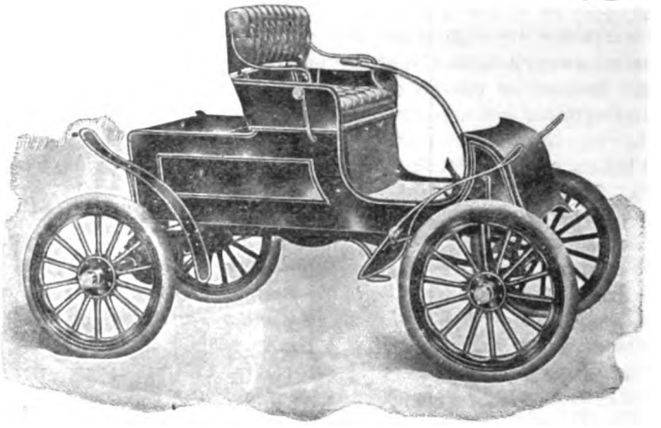
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To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

CABLE ADDRESS, "MOTORWORLD," NEW YORK

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NEW YORK, DECEMBER 4, 1902.

For Sprinkling Reform.

There seems to be a suspicion in some quarters that salt must have been sprinkled on the tail of the Aldermanic bird, that he has been so tamely caught and tied to a perch on top of the Hildebrandt sprinkling cart.

Fie! Out upon the thought! Read on another page the lucid explanation of Alderman Mathews as to why his committee reported against permitting the Street Cleaning Department do the sprinkling and in favor of so arranging the matter that the present contractors might have the best chance of monopolizing Brooklyn and The Bronx, beside Manhattan. It was inspired by a sentiment of pue statesmanship, done to save the taxpayers' money. The "old way is the best," quoth Armitage. So thinks Mr. Hildebrandt, president of the Street Sprinkling Association, but he did not take the trouble to attend any of the public hearings and say so. As it now turns out, it was not necessary. How simple!

The explanation of Alderman Matthews does not explain a great deal. He is afraid that to have the city water all the streets would cost too much money, and that even if the money was appropriated, not all the streets would be sprinkled, and after all he thinks that all the streets do not need sprinkling. He objects to the clause which explicitly gives the advantage to the present contractors, but thinks that the bill is so drawn that the present contractors would have the advantage anyhow. Quite candid, that.

Concerning the fact that every class of road user supported the ordinance which his committee "turned down," Alderman Mathews says that they did so from selfish motives. Now, is that not strange! When a representative body of citizens—and those who supported the Oatman ordinance represented many thousands—go before their legislators and ask for enactments beneficial to them, and no one opposes, they are selfish.

The day is not yet lost to those who want clean, healthy and non-slippery streets. The Law Committee is not the whole Board of Aldermen. Many a bill recommended by it fails to pass. Neither is the board the chief executive. Mayor Low is an automobilist and a bicyclist. He knows from personal experience all about how sloppy and dangerous the asphalt is after the carts of the present sprinkling magnate have gone over it. The language of the ordinance that has been recommended for passage and the circumstances under which it was drafted by one of the Law Committee are—well, peculiar.

Let the automobilists and the other road users now get together for a final tug. Let the facts be known and the ordinance will not be signed. Probably it will not be passed.

A meeting of those interested has been called for Saturday night, at 310 West Firty-third street. Every association of road users should be represented. The automobile clubmen and the manufacturers surely should be on hand.

The Real Enthusiast.

Automobilists are divided into two classes—those who do and those who do not enjoy winter driving. The latter is much the larger body. Indeed, a very considerable number regard it with much the same feeling that the devil is said to entertain toward holy water. They see no pleasure in it, and rarely can be induced to undertake a drive of any length. To them from December until February is a closed season, a time when motors and motoring are dismissed from the mind and attention turned to other matters.

By the ardent winter driver this attitude is one attributable only to ignorance. No one can try a drive on a crisp, bright morning, with the thermometer well below the freezing point, without experiencing in fourfold force the joy of living. After the first few miles the blood begins to tingle and the whole body to glow with a warmth that seems to come as a retort to the challenge of the wind and the cold. How an automobilist can abstain from such pleasures, after they have once been tasted of, is almost inconceivable. Or so the winter enthusiast thinks.

As a matter of fact, it nearly all depends on the way the matter is approached. If one dresses properly, keeping the hands and feet well protected and the body thoroughly wrapped, and brings the requisite amount of courage to the start, so that the first shock will be met half way, it is long odds that pleasure, and not pain, will result.

It is a good deal like taking one's cold bath. It requires some nerve to make the plunge, but the result, the pleasureable glow that follows, is ample repayment.

So with winter motoring. To listen to a hardened all-the-year-around autoist dilate upon the fascinations of driving with the wind blowing a gale and the mercury haunting the bulb, is to stand a fine chance of becoming infected with his enthusiasm and of determining to test the matter for one's self.

Raising the Dust.

Why is the average car such a dust stirrer and scatterer, so much so that its occupants have to be protected in all sorts of ways against the enveloping clouds that penetrate everywhere? Many explanations of the phenomenon have been offered, but none of them seem to quite cover the matter.

Take a seat in a car and watch the wheels as they roll over the road, and you will see that it is not an easy question to answer. In the first place, as every one knows, most of the dust rises and follows in the wake of the car, and, as a matter of course, a car following on gets more of it than does the first car. Again, the big tires stir up the dust more than smaller ones; the speed is another factor, and the direction in which the exhaust is sent is sometimes still another. But it is not at all certain that the sum

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total of these is sufficient to account for it all.

Bowling along a good macadam road, at the time rather dusty for want of rain, at a pace of fifteen miles or so, recently, it was seen that there were three distinct clouds of dust rising from the front wheels of the car. One came from behind the tread, the other two from the sides of the tire touching the ground. For a time the three clouds preserved their individuality; then they merged into one large and slowly rising cloud.

But even the occupants of the tonneau body, one of which the observer in this case happened to be, got very little of this dust—just enough to make it plain that there was dust about. The effect so far as the rear wheels were concerned could not be so plainly seen. The wheels themselves partly obscured the view. But the result seemed to be the same, except that the clouds coalesced sooner and then spread out more. Some fifteen or twenty feet behind the car there was a good sized cloud of dust, but scarcely any came into the car from the back of the tonneau.

There was none of the swirl of dust noticed in the case of cars going at high speed. It did not form the segment of a circle, starting from a point underneath the tonneau body and ending in the body itself, as it does in such cases. In fact, it really seemed as if the observer got more dust from the front wheels than from the rear ones.

About Engine Speeds.

It would take a bold prophet to champion the cause of the excessively high speed motors at this time. Engine speeds are decreasing, or perhaps it would be more accurate to say that a greater uniformity in the matter is obtaining and that the majority of cars are equipped with what are generally looked upon as moderate speed engines.

It is not meant, of course, that the high speed engine has passed away. Such is very far from being the case, and it is doubtful whether it ever will be. Motors of this type have a field, and the sphere of their influence is not likely to undergo any marked diminution. At the same time, the chance of its being widened is much more remote.

For more than a year the belief that the medium speed engine was the best for general service has been gaining ground.

The increased use made of it has tended to confirm that belief. Whether for single or multiple cylinders this holds true. Greater power and steadiness, less wear and tear on the parts, better lubrication—these are some of the advantages that follow in the train of engines of the class referred to.

Speeds of 800 to 1,200 revolutions per minute may be said to mark the extremes of what are now generally styled medium speed engines. While the term is a very elastic one, few will dissent from the expression, or do otherwise than hold engines which exceed or fall below this speed as high or low speed engines, respectively.

While uniformity is very far from being apparent—some say it is equally undesirable—in the majority of motor car details, there is some approach to it in this matter of engine speeds.

Not very long ago the most striking diversity of practice existed. Makers were groping for the best. But they did not all seek it in the same direction. They branched out, just as now they are uniting again. The belief in medium speeds is probably stronger than it ever was. At the rate things are going there will in a short time be practical unanimity among the great bulk of makers on this point.

Motor Vehicle Nomenclature.

The mutability of motor vehicle nomenclature has been frequently remarked upon, and ascribed to the extreme youth of the pastime. With maturity, it was expected, would come some approach to finality, and, by a process of elimination and addition the fittest would in the end survive and all else be cast out.

Within the last year, however, while there has been much shifting back and forth there has been little real settlement of the questions at issue.

Old terms are falling into disuse and new ones taking their place. But it frequently happens that just as we have about made up our minds that certain words have been definitely adopted others spring into popularity and oust their predecessors from their position. So the battle goes, and no man can tell what the outcome will be.

If we take first the very name of the motor vehicle, there is still very far from being unanimity on the subject. "Automobile" was at one time almost universal, and few persons would have ventured to predict its falling into desuetude. But to-day "car" is a term much more generally used, being applied not only to the big vehicles, but frequently to the runabouts and similar types.

Turning from the machine to the man, we find that "chauffeur" has in a few months undergone a transformation. Formerly it meant the operator or the driver of the car, and, by preference, the owner thereof, in contradistinction to the professional who was, with like unamimity, called the "mecanicien." Now owners fight shy of "chauffeur," preferring to be referred to as "drivers" or "operators." Consequently the "chauffeur" is usually, but not always, looked upon as the man engaged to look after the car, keep it in order, and, if necessary or desirable, drive it—a mechanic, in short. At the same time the French "mechanicien" is falling into disuse, and the distinction between him and the professional "chauffeur" is now seldom made.

In all this it must be admitted that we are but striving after terms concise, expressive and euphonious, something that, in short, "fills the bill."

It can scarcely be said that we have not succeeded even yet. We have tried foreign terms—mostly French—and, after extended use of them, have pretty nearly decided that we don't exactly like them. Hence we are ready to take up anything that promises to be an improvement, even although we may have some fear that the promise will not be quite fulfilled.

There is hope for those who howl about the noise and smell and smoke or steam of automobiles. The very latest thing in mufflers is the invention of a German artillery officer, who has arranged a combination of cylinders by means of which a heavy field piece, so it is said, can be discharged noiselessly and without a sign of flame or smoke being visible. Engine mufflers are down to a pretty fine point nowadays. In the future the ideas of the German genius may be made adaptable for muffling the noise of running gears, just to please the sensitive; but that will probably be when every road is made of boiler plate and every vehicle has rubber tires.

Here we are on the edge of another winter and yet no signs of the coming of the motor sleigh. Imagine the effect of the appearance of such a vehicle on Fifth avenue or Seventh avenue or in Central Park! Some one is wilfully throwing away a chance for columns of newspaper fame and portraiture.

One measure of a man's ability to become a practical automobilist is the length of time it takes him to find out when he's wrong.

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Comment Unnecessary.

White Sewing Machine Co.
Automobile Department
Rose Building.

Cleveland. O. Sept. 17, 1902.

The MOTOR WORLD,

Tribune Building,

New York, N. Y.

Dear Sirs:

We are pleased to renew our advertising contract withyou for another twelve months, and wish to say that we have been very much pleased both with your conduct of the paper and the results which we have obtained from same.

Yours truly,

White Sewing Machine Co.
W. G. White

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THE AUTOMOBILE RECORD

Records of every sort were sent flying during 1902. Again and again the time for the mile has been lowered, both on track and road. There is not a single set of records in any class that have remained intact. A glance at the accompanying table will reveal that there are few records which do not bear the date of 1902. Those that do not are for the most part for the longer distances, while the others are more or less exceptional with regard to the style of vehicle and character of the course.

It is noteworthy that the new records presented are track records, most of them made by practical road vehicles, and not by specially contrived racing cars. While the record for the mile and the kilometre belong in France, practically all the track records belong in the United States. The foreign records were made on the road by racing cars. Another point to be noted is that the new records almost without exception have been made by American cars. All these facts are significant of the practical advance made by the automobile builders of the United States and the popularity of the sport.

It has been a good year for track racing, and there is hardly a course in the country suitable for the purpose on which a meet has not been held. Road contests, on the other hand, have been wanting, the sport in that direction having received a severe blow early in the year by reason of the accident on Staten Island on May 31. Had it not been for that lamentable affair it is undoubted that several other road contests of the sort would have been promoted, and it is probable that several other straightaway records would have stood to the credit of American machines. As it is, the best straightaway records here stand where they were in 1901.

In the absence of a racing board, to which are submitted certificates of accuracy concerning the timing, the course measurement and other details for approval and the authentication of such records, the sport has not yet arrived at a stage where the compilation of an entirely perfect table is possible. There is much to be desired in the way of completeness, owing to the failure in many cases to take the time of the intermediate miles, when a machine had made a new record for five or ten miles; also some difficulty is occasioned in preserving the classification of vehicles according to weight when records are made in a free for all race. An effort has been made by the Motor World

WORLD'S RECORDS.

GASOLENE, OVER 2,000 POUNDS.

Distance.	Time.	Made by.	Place.	Date.
1 mile....	.46	....Augieres	Dourdan, France.....	Nov. 11, 1902
1 kilo.....	.29	...."Augieres"	Dourdan, France.....	Nov. 17, 1902

Note.—A claim for 1 kilo in 28 1-5, made in England by Jarrott, August 22, 1902, is recognized by some, but not generally accepted, because of the course being slightly down hill.

AGAINST TIME.

GASOLENE, OVER 2,000 POUNDS.

1 mile....	1.01 2-5.	...Bernard Oldfield..	Detroit..	Dec. 1, 1902
2 miles...	2.05 1-5.	...Bernard Oldfield..	Detroit..	Dec. 1, 1902
3 miles...	3.11 1-5.	...Bernard Oldfield..	Detroit..	Dec. 1, 1902
4 miles...	4.15 2-5.	...Bernard Oldfield..	Detroit..	Dec. 1, 1902
5 miles...	5.20	....Bernard Oldfield..	Detroit..	Dec. 1, 1902
6 miles...	6.39 2-5.	...Alex. Winton.....	Providence	Sept. 24, 1902
7 miles...	7.47 1-5.	...Alex. Winton.....	Detroit	Oct. 24, 1901
8 miles...	8.54 3-5.	...Alex. Winton.....	Detroit	Oct. 24, 1901
9 miles...	10.01 2-5.	...Alex. Winton.....	Detroit	Oct. 24, 1901
10 miles...	11.09	....Alex. Winton.....	Detroit	Oct. 24, 1901
11 miles...	14.02 2-5.	...A. C. Bostwick....	Yonkers, N. Y.....	Oct. 8, 1901
12 miles...	15.21	....A. C. Bostwick....	Yonkers, N. Y.....	Oct. 8, 1901
13 miles...	16.38 4-5.	...A. C. Bostwick....	Yonkers, N. Y.....	Oct. 8, 1901
14 miles...	17.55 3-5.	...Henri Fournier....	Fort Erie, Can.....	Sept. 26, 1901
15 miles...	19.10 4-5.	...Henri Fournier....	Fort Erie, Can.....	Sept. 26, 1901
16 miles...	20.24 4-5.	...Henri Fournier....	Fort Erie, Can.....	Sept. 26, 1901
17 miles...	21.40 4-5.	...Henri Fournier....	Fort Erie, Can.....	Sept. 26, 1901
18 miles...	22.56 4-5.	...Henri Fournier....	Fort Erie, Can.....	Sept. 26, 1901
19 miles...	24.12 2-5.	...Henri Fournier....	Fort Erie, Can.....	Sept. 26, 1901
20 miles...	25.25 2-5.	...Henri Fournier....	Fort Erie, Can.....	Sept. 26, 1901
21 miles...	26.42	....Henri Fournier....	Fort Erie, Can.....	Sept. 26, 1901
22 miles...	27.57	....Henri Fournier....	Fort Erie, Can.....	Sept. 26, 1901
23 miles...	29.12	....Henri Fournier....	Fort Erie, Can.....	Sept. 26, 1901
24 miles...	30.28 4-5.	...Henri Fournier....	Fort Erie, Can.....	Sept. 26, 1901
25 miles...	31.44 1-5.	...Henri Fournier....	Fort Erie, Can.....	Sept. 26, 1901
50 miles...	1.17.50	....Alex. Winton.....	Chicago	Sept. 18, 1900

Note.—From six to ten miles, inclusive, the competition records for this class excel those made against time.

STEAM.

1 mile....	1.09 2-5.	...J. W. Howard....	Brighton Beach.....	Aug. 23, 1902
2 miles...	2.44 1-5.	...Rollin White.....	Cleveland	Sept. 16, 1902
3 miles...	4.03 2-5.	...Rollin White.....	Cleveland	Sept. 16, 1902
4 miles...	5.24	....Rollin White.....	Cleveland	Sept. 16, 1902
5 miles...	6.43	....Rollin White.....	Cleveland	Sept. 16, 1902

Note.—The best time ever made on a track by a steam vehicle is 1.05¼, made by G. C. Cannon at Brighton Beach, Aug. 23, 1902, but this is not allowed under the rules, because of two men being required to manage the machine. At Providence, Sept. 24, 1902, Cannon sent his machine five miles in the following time: 1.21½, 2.26¾, 3.41½, 4.54, 6.05.

ELECTRIC.

1 mile....	1.46	....A. L. Riker.....	Guttenberg	Aug. 18, 1900
2 miles...	3.37 2-5.	...W. C. Baker.....	Cleveland	Oct. 25, 1902
3 miles...	5.26	....W. C. Baker.....	Cleveland	Oct. 25, 1902
4 miles...	7.15	....W. C. Baker.....	Cleveland	Oct. 25, 1902
*5 miles...	9.05 1-5.	...W. C. Baker.....	Detroit	Oct. 25, 1902
6 miles...	10.56	....W. C. Baker.....	Detroit	Oct. 25, 1902
7 miles...	12.44 3-5.	...W. C. Baker.....	Detroit	Oct. 25, 1902
8 miles...	14.30	....W. C. Baker.....	Detroit	Oct. 25, 1902
9 miles...	16.14	....W. C. Baker.....	Detroit	Oct. 25, 1902
10 miles...	17.58	....W. C. Baker.....	Detroit	Oct. 25, 1902

*This record was made from a standing start. The next five miles (flying start) were covered in 8.52 4-5.

Race Promoters to Organize.

Before another racing season rolls around the West is likely to have an association of race meet promotors, designed to further the interests of the sport in that locality. Under the leadership of the Detroit Automobile Racing Association, with W. E. Metzger as the guiding spirit, steps are being taken to launch such an organization. Detroit, Cleveland, Cincinnati, St. Louis and Chicago are the cities most interested, and there is every probability that a plan acceptable to all will be proposed within a short time. In such case a racing circuit will be arranged, running through July and August, and meets will be conducted at convenient dates and free from confliction.

Col. Astor Offers $10,000.

Wealthy residents along the Hudson River are said to be ready to subscribe considerable sums toward the construction of a highway leading to the West. Among them is Col. J. J. Astor, who is quoted as offering his check for $10,000, if the road followed the west bank of the river as far as Rhinebeck.

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,BLE BROUGHT UP TO DATE.

to give a correct list of the figures as they stand to date, but amendations or additions will be thankfully received.

All the records given are those made on a regularly measured track, except those sub-headed as road records. The fact that the competition set of figures make the biggest display is significant as showing the healthy tone of the sport. Most of the new records are made in short distance races against other vehicles of the same class. The cuts in the figures of 1901 are remarkable. The one-mile, for heavy gasolene cars, now 1:07 4-5, is a jump from 1:40. In middle weight gas cars the record last year was 1:51¾; now 1:19½. In light gasolenes the present record of 1:38¾ is a far cry from the 2:35 of 1901. In the case of steam vehicles, however, the tale is different. Oddly enough, in the steam class the competition track record of 1:39, made by T. E. Griffin in 1900, still stands. The closest approach to it is the 1:41 2-5 made by Dr. L. W. Sheppard at Chicago on October 18.

The history of the one mile and kilometre straightaway records for the year is interesting. Fournier's 0:51 4-5, made on the Coney Island Boulevard in the fall of 1901, withstood repeated assaults upon it for eight months until W. K. Vanderbilt, jr., on August 5, at Ablis, France, succeeded in lowering it to 48 2-5 seconds. At the same time he lowered Leon Serpollet's record of 29 4-5 seconds for the kilometre, made in April, to 29 2-5 seconds.

Then Fournier had to have a try to redeem himself, and on November 6 he went out on the road near Dourdan, France, and covered a measured mile in 47 2-5 seconds, beating Vanderbilt's time by just one second. Fournier also gathered in the kilometre record by one-fifth of a second, covering the distance in 29 1-5 seconds.

Fournier's triumph was of short life, for in less than a week a Paris merchant, who chose to operate under the pseudonym of M. Augieres, went out and made a mile in 46 seconds flat, and a few days later, November 17, he covered the kilometre in 29 seconds.

At the moment of writing, the latest piece of American record breaking comes over the wire from Detroit, saying that "Barney" Oldfield has lowered all of the track records from one mile to five, as shown by the table. The former records, made by Alexander Winton, were: 1:02, 2:12 1-5, 3:18 4-5, 4:25 and 5:30 3-5.

The steam record of 1.06, against time, made, or rather manufactured, by T. E. Griffin on September 18, 1900, which was accredited to him last year on his own representations, has been thrown out; information of a reliable character justifies its rejection.

IN COMPETITION.

GASOLENE, OVER 2,000 POUNDS.

Distance.	Time.	Made by.	Place.	Date.
1 mile....	1.07 4-5	Bernard Oldfield	Detroit	Oct. 25, 1902
2 miles...	2.12	Bernard Oldfield	Detroit	Oct. 25, 1902
3 miles...	3.17	Bernard Oldfield	Detroit	Oct. 25, 1902
4 miles...	4.22 2-5	Bernard Oldfield	Detroit	Oct. 25, 1902
5 miles...	5.28	Bernard Oldfield	Detroit	Oct. 25, 1902
6 miles...	6.34 3-5	Alex. Winton	Cleveland	Sept. 16, 1902
7 miles...	7.38	Alex. Winton	Cleveland	Sept. 16, 1902
8 miles...	8.42	Alex. Winton	Cleveland	Sept. 16, 1902
9 miles...	9.45½	Alex. Winton	Cleveland	Sept. 16, 1902
10 miles...	10.50	Alex. Winton	Cleveland	Sept. 16, 1902

GASOLENE, 1,000 TO 2,000 POUNDS.

1 mile....	1.19½	Percy Owen	Providence	Sept. 24, 1902
2 miles...	2.32	Percy Owen	Providence	Sept. 24, 1902
3 miles...	3.46	Percy Owen	Providence	Sept. 24, 1902
4 miles...	5.00½	Percy Owen	Providence	Sept. 24, 1902
5 miles...	6.14¾	Percy Owen	Providence	Sept. 24, 1902

GASOLENE, UNDER 1,000 POUNDS.

1 mile....	1.38¾	J. F. Duryea	Providence	Sept. 24, 1902
2 miles...	3.09¾	J. F. Duryea	Providence	Sept. 24, 1902
3 miles...	4.39¾	J. F. Duryea	Providence	Sept. 24, 1902
4 miles...	5.11¼	J. F. Duryea	Providence	Sept. 24, 1902
5 miles...	7.42½	J. F. Duryea	Providence	Sept. 24, 1902
10 miles...	19.05 4-5	Rollin White	Detroit	Oct. 19, 1902

STEAM.

1 mile....	1.39	T. E. Griffin	Chicago	Sept. 18, 1900
2 miles...	4.01¾	G. C. Cannon	Providence	Oct. 17, 1901
3 miles...	5.08	A. L. Lee	Providence	Sept. 17, 1902
4 miles...	7.55¼	G. C. Cannon	Providence	Oct. 17, 1901
5 miles...	8.04	M. Reimers	Chicago	Oct. 18, 1902
10 miles...	19.05 4-5	Rollin White	Detroit	Oct. 10, 1901

Note.—This set of records also is unsatisfactory because of the intermediate times for Reimer's five miles not having been taken. The 5.08 of A. L. Lee was made in a three-mile race.

ELECTRIC.

1 mile....	2.08¾	W. C. Baker	Cleveland	Sept. 16, 1902
2 miles...	4.03	W. C. Baker	Cleveland	Sept. 16, 1902
3 miles...	5.54¾	W. C. Baker	Cleveland	Sept. 16, 1902
5 miles...	10.28½	A. L. Riker	Newport	Sept. 6, 1901

ROAD RECORDS.

GASOLENE, OVER 2,000 POUNDS.

1 mile....	0.51 4-5	H. Fournier	Brooklyn	Nov. 16, 1901
25 miles...	1.06.42	A. Fisher	Long Island	April 14, 1900
50 miles...	2.30.01	A. Fisher	Long Island	April 14, 1900

GASOLENE, UNDER 2,000 POUNDS.

1 mile....	1.17 3-5	Percy Owen	Staten Island	May 31, 1902

STEAM.

1 mile....	1.12	S. T. Davis, jr.	Staten Island	May 31, 1902
1 kilo.....	.46 1-5	S. T. Davis, jr.	Staten Island	May 31, 1902

ELECTRIC.

1 mile....	1.03	A. L. Riker	Brooklyn	Nov. 16, 1901
1 kilo.....	.36 1-5	W. C. Baker	Staten Island	May 31, 1902

MOTOR BICYCLE.

1 mile....	1.10 2-5	C. H. Metz	Staten Island	May 31, 1902
1 kilo.....	.43 3-5	C. H. Metz	Staten Island	May 31, 1902

Course for Bennett Cup Race.

The route of the 1903 Bennett Cup race is still undecided. The sub-committee appointed by the Automobile Club of Great Britain, which went to Ireland to look for a suitable course, has reported in favor of running the race in that country, but the Automobile Club of France is understood to have declined to accept it. In consequence there is talk of running it in conjunction with the Paris-Madrid race.

With regard to the proposed course in Ireland Count Zborowski and the secretary of the Automobile Club of Great Britain have discovered a circular route at about fifty-nine miles, which, although not ideal, would be quite practicable. A telegram has been received, however, from the Automobile Club of France to the effect that it could not agree to race over a course with such a short radius. Efforts will now be made to find a suitable road in Ireland ninety-four miles in length, as the rules provide that the race may be run backward and forward over a course of not less than that distance.

The British Automobile Club has decided to nominate two Napier automobiles out of the three representatives of England.

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Commentary

Whenever the gentle theorist wants something for space filling he sets himself to work to reconstruct the ancient inns on a foundation of the trade automobiling will bring to them. The theory is fine; the facts are the reverse. Road houses first came into being when highways were used by travellers in stage coaches or on horseback. When railroads appeared some of the roadhouses went out of existence. When the suburban trolley lines gridironed the country the remaining ones faced the inevitable, and, facing it, most of them failed from lack of patrons. As the keeper of a roadhouse famous in the annals of old New York said to me on Sunday:

"Just as we were about giving up after the bicycle boom left us, road driving and equestrianism began to pick up, and I really thought the old business would keep me the balance of my life. I know better now. The automobiles have killed the roadhouse game deader than Adam. They go rushing by here all day long, and never one of them stops, unless it is to borrow a wrench or ask where gasolene can be bought. My former customers have either quit driving altogether or have sought the back roads or highways where neither the automobilists nor myself can find them. My lease expires next year, and down comes my sign. It has been hanging up there for three generations. This place had a great reputation. My father made money here, as did my grandfather before him. I am able to give better accommodations than either of them; but there is no trade to cater to. I am driven out of business by the automobile."

The man who told me this knew what he was talking about, and showed no prejudice in the telling. The fact that he had declined to renew his lease was a proof of his sincerity that not even I could doubt. Personally I believe the automobile will do more to close up roadhouses and alleged "inns" than it will do to open them, and, candidly, I don't think the closing of the majority of such places of entertainment will be altogether a thing to be sorry for, either.

* * *

The opinions of the motorphobes rest upon this very positive basis—that they adopt the mistakes of a few as evidence of the worthlessness of all.

* * *

It has pleased the daily papers to make a great hullaballoo over a waiter in the Balledoff winning an automobile which was raffled off in some sort of a charity bazaar or fair. But why? Surely, if any man can pay the repair bills for a church fair automobile that man is a Balledoff waiter! Then, again, there is a sort of eternal fitness in it all. Once in the hands of the storage and repair man the haughty waiter will then know what it is to be met by constant demands for money. Really, I'm glad the winner of the vehicle was a waiter, since his owning a church fair automobile is about the only chance any of us will ever have to get even with him. Just think of it! A fight out between a repair man and a waiter! It's rich!

* * *

Nothing is such an obstacle to production of excellence as the power of producing what is good with ease and rapidity. In the manufacturer's inability to turn out the perfect automobile in quantities to suit lies the brightest hopes of the trade's future.

* * *

With the near approach of the automobile show, it seems to me that something must have gone wrong over in Menlo Park, New Jersey. I have watched the daily papers closely for the spread eagle, scare headed stories about that wonderful storage battery, but not a line have I seen. This silence is ominous; it is not according to precedent, the almanac, Hoyle or the ethics of press bureauism. Wonder what the matter can be?

* * *

The lone oyster of the church fair stew will please go drown himself. There was a day when the oyster was the whole thing in church entertainments, but, like many another, he must now make way for his betters. Enter the automobile! Not in the soup, of course, but in the game of church entertainment, wherein profit is sought to be derived from those entertained. The new church game which is now all the rage is "Around the World in Automobiles." The way this coin capturing game is played is this: First get your automobiles, borrowing them if you can, hiring them only after all other efforts fail. The church is, for the purpose of the game, "the grand central station," and the houses of the parishioners who promote the affair become the various "countries" to be visited. Each house is arranged to represent a different country, and the inmates are appropriately costumed for the parts they play. The automobiles start from the church and visit each house, or "country," in turn, those making the tour paying the promoters a set price for the trip. So successful has this game become in up to date church circles in the East and West that the fair, the donation party and other such archaic coin catchers are temporarily in disrepute.

* * *

Did you ever notice that with the exception of ourselves no one ever runs an automobile just at it should be run?

* * *

The effort to start a rival automobile club here in New York is still progressing—on paper. I am not prepared to say there is not room for such an organization, though I am free to confess my hearing is not acute enough for me to be able to declare there is a crying need for anything of the kind. But until you can extract moonbeams from cucumbers I shall be inclined to doubt the ultimate success of an association the prime mover in whose organization is an individual expelled from the present club for good and sufficient reasons. It would be the part of wisdom if those favoring the formation of the new club were to at once announce that the individual who is now foremost in shouting for it is not to be the standard by which its future membership is to be judged, otherwise the class who would ask to become members would not compare at all favorably with those of the Automobile Club of America, whose mistakes, be they what they may, have never been in the direction of a low standard of eligibility where the requirements of membership were under consideration.

* * *

Reference to the club promoter in the foregoing reminds me that he has on hand besides this club scheme an automobile paper to appear daily during the time the show is on at Madison Square Garden. Just how such a sheet will succeed when the management of the show has announced that no automobile publications are to be allowed to purchase space in the show because the proprietors of the papers "annoy the trade with them" remains to be seen. Perhaps, though, a gentleman nominally high in the trade, who is currently reported to be "backing" the weakly end of the daily scheme, is counted upon to exert sufficient influence in favor of his partner's publications to accord them privileges denied to other and more reputable periodicals. To any one who has watched how this alleged backer has used his office and position for the benefit of his partner and his paper anything he might do in the present instance would occasion no surprise.

* * *

That a horseless carriage should be the father of a noiseless cannon does not at first sight seem natural, yet such is the case. Colonel Humbert has succeeded in applying the principle of the muffler to a French field gun, with the result that the flash, noise and smoke of the piece are practically done away with. How the glory of war is passing! Imagine the field battery of the future going into action, a horseless, flashes, smokeless, noiseless, death dealing mass of complicated machinery, with nothing to commend it save its speed and its secrecy! Could anything be more awful or less encouraging to those who "would seek glory at the cannon's mouth"?

* * *

The French are still debating over the gender of the automobile. To settle all arguments of every kind, why not declare that the automobile is IT, and let that slangy expression of a palpable fact end the matter?

* * *

Necessity is called the mother of invention, but in the case of the motor vehicle inventor it is very often the cruel mother of fairy tales.

* * *

Already automobiling has an oversupply of average vehicles.

THE COMMENTATOR.

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HILL CLIMB UNSATISFACTORY

Eagle Rock Affair a Dreary, Drawn-Out Event Ending in Error and Dispute.

Only by a narrow margin was the second annual hill climbing contest of the Automobile Club of New Jersey, which took place on Thanksgiving Day, saved from being a fizzle. Pretty nearly everything seemed to militate against its success. The weather was about as bad as it could be, local officials with itching palms delayed and otherwise aggravated matters, and difficulty in getting the timing apparatus working combined to come perilously near to putting the finishing touches on the event. By dint of strenuous exertions, however, the obstacles were all cleared away finally, and the contesting vehicles made to complete their tasks.

Three days of rain preceded the day set for the contest, and a drizzle prevailed during a good part of Thursday morning. With midday, however, came a change. The clouds broke away and the sun shone forth at intervals with frequent retirements, as if abashed, however.

SUGGESTS A FIRE BUT IS MERELY "STEAMERS" EXHAUSTING.



CROSSING THE TAPE AT STARTING POINT

PLANK (OLDSMOBILE) ROUNDING THE LAST TURN.

ON THE STEEPEST GRADE.

The sun had little power, and the only change that took place in the road's surface was a change from a semi-liquid covering to a thick paste that was but little improvement. It was nearly an inch thick, and the wheels of the vehicles adhered to it almost as if it had been cement. Steam was devoured at a prodigious rate, while the gasolene cars had troubles of their own in consequence of the unusual road friction. A single look at the road was all that was needed to make it plain that broken records were the last thing to expect.

Scheduled to begin at 10 o'clock, it was not until nearly two hours and a half later that the first car was started on its journey.

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Although but little more than a dozen cars came to the starting point, in lieu of the thirty-one entrants, it was not until about 2 o'clock that the last one had completed the ascent.

In arranging for the contest the Automobile Club of New Jersey had reckoned without the Mayor of West Orange. That self-sufficient functionary was on his dignity, and he intimated very plainly that he had to be seen, in more than one sense, before the show could go on. Consequently Chairman W. J. Stewart had to come to terms with him, with the result that the West Orange police force, consisting of two officers, was placed on guard on the hill—at the club's expense. Then, and then only, the embargo was lifted.

It took more than an hour to arrange this little matter. Meanwhile there had been some delay in getting the time apparatus, the Mors device, with Secretary Butler in charge, having been loaned by the Automobile Club of America, in working order.

The vehicles were limited to one trial each, but were given plenty of time to get ready. No restrictions were placed on them in the matter of starting, and most of the operators took a long start, coming to the tape at the foot of the hill at full speed. Several hundred spectators had gathered to witness the sport, and they were spread over the length of the hill, the largest groups being at the bottom and top. A few of the cars made abortive attempts to ascend the hill, and one, a vehicle equipped with a kerosene burner, caught fire about a third of the way up and burned for about ten minutes, but without causing any material damage

The first car to start was No. 9, a Toledo steamer, but as the starting time was not received at the finishing point the trial went for naught, and the operator, Angus Sinclair, declined to make another attempt. The second car was even more unfortunate, for it was the one that caught fire. It also failed to reach the top of the hill and be timed. The following cars were more fortunate, and matters went smoothly thereafter. W. J. Stewart's No. 13 upset preconceived notions by making the best time in its class, 2:58¾, and, as it proved, the best of the day. O. P. Nestman's Stevens-Duryea was at first credited with having covered the distance in 2:45, within three seconds of the best time of last year and much faster than any gasolene car had made the climb. Subsequently, however, it was given out that a mistake had been made, and the corrected time of 3:45 substituted.

Some little excitement was created by the action in this case. Nestman claims that he carried a watch as he went up the hill, and is confident that 2:45 was the right time. He avers his willingness to equal this time, and to run the contest over again, or a new one, to prove that his claim is well founded. The Motor World man was at the steepest portion of the hill as Nestman came up, and noticed that he was coming at a good speed —much faster than any of the other gasolene cars.

According to the report submitted by S. M. Butler, the official timer, he is convinced that the time first given out, 2:45, is a mistake, due to the fact that it fell to him to both manipulate the instrument and read the times. On other occasions there have always been two men allotted to these duties. Three watches are said to have shown the time to be in the neighborhood of four minutes instead of three, and in view of these facts the change of time was made.

To a Motor World man on Tuesday W. J. Stewart stated that he was convinced that the time made was 3:45. But, he added, he was willing to accede to Nestman's request and have another contest up the hill on any terms suggested by the latter.

The results, corrected and officially given out, follow:

STEAM CLASS.

Time.	Operator and make.	H.P.	Wgt.
2:58¾	—W. J. Stewart, Locomobile.	4½	750
3:08	—E. P. Washburn, Mobile...	4½	750
3:36¾	—W. J. Stewart, Locomobile.	4½	750
3:43¼	—H. M. Wells, Prescott.....	4½	900

GASOLENE CLASS.

3:45	—Otto Nestman, Stevens-Duryea..	8	1,050
4:26	—Dr. H. Power, Duryea....	6	900
4.49¾	—J. D. Dale, Long Distance..	7	1,400
4:52¾	—C. E. Proctor, Winton....	15	2,000
5:20	—H. M. Odiorne, Long Distance	7	1,400
6:06	—I. D. Plank, Oldsmobile...	4	800
7:15	—L. J. Wyckoff, Knox.....	8	1,400

The Searchmont
"America's Leading Automobile"

THREE SEARCHMONTS were entered in the 100 Mile Non-Stop Endurance Contest of the Long Island Automobile Club, April 26, 1902. All made a perfect record of 100 per cent. without a stop.

THREE SEARCHMONTS were entered in the 100 Mile Non-Stop Endurance Contest of the Automobile Club of America, May 30, 1902. All made a perfect score of 100 per cent. without a stop.

THREE SEARCHMONTS were entered in the 500 Mile Reliability Contest of the Automobile Club of America, Oct. 9 to 15, 1902. All made a perfect record of 100 per cent. without a penalized stop, and EACH was awarded a GOLD MEDAL.

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NO REFORM IN SPRINKLING

Despite United Opposition, Aldermen Favor Present System—Matthews's "Explanation."

Our City Fathers—take off your hats to them—or at least that portion of the august body known as the Law Committee, have decided that the united sentiment of the automobilists in New York amounts to nothing, that the protests of the bicyclists, the truck drivers, cabmen, pleasure drivers and the Commissioner of the Department of Street Cleaning, all combined, are too trifling to be considered, and the committee has reported against the street sprinkling ordinance which all those mentioned have earnestly advocated.

More than that, the committee has reported in favor of the slick little substitute bill drawn up by Alderman Marks, under which Mr. Hildebrandt and his Street Sprinkling Association will not be confined to Manhattan, but will have all the other boroughs of the city opened up for him and his pretty use of the people's water for the benefit of such portion of the people as choose to "ante up" to him for it.

The Sprinkling Association is a concern incorporated in West Virginia with $700 capital, and its plan of operation is to pay the city $28,000 a year for the exclusive right to use as much of the city's water as it pleases and to sprinkle when and where it pleases. It derives its revenue from the tenants along the different streets it sprinkles. Where no one pays, there is no sprinkling.

The Oatman ordinance ousted the Hildebrandt gang and placed the matter in the control of the Street Cleaning Department.

Alderman Armitage Matthews, who is chairman of the Law Committee, was called upon by a representative of The Motor World and asked what were the considerations which induced the committee to take the course it did. He said that the Oatman ordinance involved the expenditure of too much money. Beside, he thought that for sprinkling all the streets the estimate of Commissioner Woodbury was much too low; beside, the estimate did not include Brooklyn, and all the Brooklyn members were against the ordinance; beside, he thought that after all the present plan was the best one, because if the city undertook to sprinkle it could not do it all, and there would be a howl from every place that was not watered."

"But, Mr. Matthews, might not a contractor neglect to sprinkle and cause a howl, and would it not be better for the blame to rest squarely on the head of a department than to have him dodging behind a contractor?"

"Not if the proper sort of a contract is made. It is the lookout of the borough president to see that he has his contractor properly bound to do the work and under bonds. Most of the city's work is better done by contract."

"What about the clause in the ordinance which provides that only those who have had experience in street cleaning may bid for the borough contracts? That lets in as practically the only eligible party the very corporation that has been so long complained about, and rather smacks of a 'nigger in the woodpile,' doesn't it?"

"I didn't like that part of the ordinance myself. I didn't like that."

"If you did not like it why did you not vote against it?"

"Well, I am not taking the political view of it, but only considering what is best for the city. I do not think there is any nigger in it, and anyway the man with the plant, you know, would underbid the man who would have to buy one, so it would amount to the same thing. I did not like that part of the bill, but then there are other sprinkling plants beside the one working here. There is a contractor in Queens that I know. He could bid."

"What about the charge that under the present plan of sprinkling the contractor uses more water than what he pays the city for?"

"I do not know that it is so, but if so it is the city's lookout. If you can get two pounds of coffee for the price of one you're going to take it, aren't you? The city should see that the price paid is compensatory and hold the contractor to his letter. If he doesn't do as he should the city should be able to tmake him do it."

"I suppose, Alderman, that in this age of politics it is utopian to believe that for the sake of health and safety to street traffic and cleanliness the streets should be washed and cleaned, whatever the cost?"

"Well, if there is a great amount of money to be spent there are too many ways in which it is needed more. There is Bellevue Hospital, a disgrace. If $650,000 were spent on it it would be better than putting it into street sprinkling. The trouble is the people want money spent all the time and are not willing to let us get the revenue. Now look at that tunnel proposition——"

Here the Alderman digressed at length about the Pennsylvania tunnel scheme.

"One more question, Alderman. How did your committee dispose of the consideration of all the sentiment in favor of the Oatman ordinance that was represented by the various bodies of road users who advocated the passage of the Oatman ordinance and the fact that there was not a particle of opposition?"

"Oh, all those people are speaking selfishly and without regard to cost. They are speaking for themselves. The automobilists say their tires skid and the cyclists say something else."

"But bicycle tires skid the same as automobile tires, and the rider is more apt to fall."

"Do they? Well, the automobilists are not so urgent about the sprinkling. As I understand it, they would rather that the streets should be left dry and kept clean."

OLDFIELD GETS THE MILE

After Two Failures he Betters Winton's Record and Makes new Figures up to Five Miles.

World's track records against time, from one to five miles, inclusive, were established at Detroit on Monday. The Grosse Pointe track was the scene of the onslaught, and "Barney" Oldfield, driving the Ford racing car belonging to Thomas Cooper, was the record breaker.

Two five-mile trials were made. In the first one the times for each mile was as follows: 1.03 3-5, 2.08 1-5, 3.12, 4.14 4-5, 5.21. On the second trial the time by miles was as follows: 1.01 2-5, 2.05 1-5, 3.11 1-5, 4.15 2-5, 5.20, lowering the five-mile record eight seconds.

A third trial was started, ten miles being aimed at, but after going one mile in 1.01 1-5, world's record, the sun had thawed the track and made it slippery, and the trial was relinquished.

The trials were official and were made under the auspices of the Detroit Automobile Racing Association. There were four timers and two scorers present.

On the previous Saturday Oldfield had made an unofficial trial, with such excellent results that the later attack, with a regular corps of officials, followed. The time selected for the Saturday trial was early in the morning, before the sun had a chance to thaw the surface of the track. In a three-mile trial he covered one mile in 1.02 flat, but that was unofficial.

As he started upon this trial a fine snow commenced to fall, and in a moment the course was too slippery to permit him to come inside any record. This time the first mile, which was also the last, was done in 1.05. As he entered the turn from the backstretch of the second mile the powerful and heavy car slewed around, and before it could be straightened away had turned around three times, and when stopped was headed for the training stables. The remarkable nerve exhibited by Oldfield in driving the Ford-Cooper racer was commented upon by all who witnessed the attempt.

The following were present at Saturday's trial: W. E. Metzger, Jackson Brady, W. C. Rands, Jno. P. Schneider, Wm. Newman, Robt. Hartnell, Tom Cooper, John Colquhann, Ed. McNess and Ned Brodwell, of Detroit; W. E. Wheeler, of Minneapolis, and E. P. Brinegar, of San Francisco.

To Protest Aldermanic Decision.

A call has been sent out to all interested in the abatement of the street sprinkling nuisance in New York to meet on Saturday night, December 6, at 310 West Fifty-third street, near Eighth avenue. The "joker" ordinance approved by the lawyers of the Board of Aldermen may yet be headed off if those who have hitherto championed the cause will stick together and let the facts be known. No self-respecting Mayor is likely to sign such a bill under such conditions.

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LICENSE HEARING TAME

Only the Man Who Drafted the Law Spoke in its Favor—Opposition Riddled it.

Even the principals seemed to have a suspicion that the hearing on the bill to license the operators of automobiles, now before the Board of Aldermen, this city, which took place on Friday last, was of a perfunctory nature. There was talk for and against it, but no one took it seriously or seemed to think that it had any chance of passing; not even its author, one Thompson, who made a long speech defending it from the ridicule that had been cast upon it.

Although ample notice of the hearing had been given, the number of those attending it did not exceed a dozen, all told. These comprised President Shattuck and Secretary Butler, of the Automobile Club of America; President Oatman, of the Associated Cycling Clubs; Attorney W. W. Niles, of the A. C. A. and the N. A. A. M., and J. B. Thompson, who drafted the measure.

With a copy of the ordinance and a memorandum before him, President Shattuck, who was the first speaker recognized by Chairman Mathews, began a criticism of the measure. He characterized it as an abortive and ridiculous ordinance, and proceeded to point out some of its weaknesses and inconsistencies.

"It is charity to suppose," he said, "that the author of the measure was merely ignorant when he provided that all lamps carried on automobiles should be brought before the Mayor for inspection before being used. The Mayor has his hands pretty nearly full now. As to the provision that metal signs, containing numbers one-half inch in height be placed on each lamp, it is equally absurd. No one could possibly read such signs on moving automobiles. On cabs and hacks, where such numbers must be carried, the idea is that they shall be examined in case of dispute about the fare, the vehicle meanwhile being at a standstill.

"The measure provides that $10 shall be charged as a license fee. That is, in my opinion, entirely too much."

"Do you object to a licensing scheme on general principles, Mr. Shattuck?" asked Chairman Mathews.

"The club has already appointed a committee to look into this and other matters, and at the meeting of the Legislature in January a bill will be introduced relating to the regulation of automobile traffic in this State, and containing a licensing plan. We are in favor of license; but we think the licensing should be done by the State and be uniform."

"Why are motor cycles excepted in this ordinance? I should dislike just as much to be killed by one of them as by an automobile. I have never been killed by either, but I feel that this would be so," concluded Mr. Shattuck, smilingly.

As the legal adviser of the club, W. W. Niles spoke next, but very briefly.

"The Board of Aldermen has no power except such as is expressly conferred on it by the body which created it, in this case the State Legislature," he said. "No power to compel automobilists to take out licenses is conferred in the city charter; consequently the board has no legal right to pass this ordinance. In the second place, the Legislature has expressly forbidden any municipal body to make such a regulation," referring to the well known section of the Doughty bill, which reads:

"Any person owning or operating an automobile or motor vehicle, whether the motive power of the same be electricity, steam, gasolene or other source of energy, except such as are used for public hacks, trucks or vehicles for hire, shall not be required to obtain any license or permit pursuant to the provisions of any local or municipal resolution or ordinance, or the rules or regulations of any commissioners, trustees, supervisors or other authorities having charge or control of any highway, public street, parkway, driveway or place, or pursuant to the provisions of any municipal charter or any other statute, except as herein contained."

On behalf of the Associated Cycling Clubs of New York, President Oatman protested against the passage of the ordinance. "Cyclists have known in the past what it is to have to be licensed to ride their wheels," he said, "and they do not want such things revived in the case of automobiles."

The field was now leftt clear for the defenders of the ordinance, and J. B. Thompson took upon himself the task of combatting the arguments that had been presented. In a tone so low as to be almost inaudible, and which was but slightly raised in response to a request to speak louder, he defended the proposed ordinance. Almost at the outset he was put on the defensive by being asked if he rode a motor bicycle and had, for that reason, excepted them and motor tricycles from the provisions of the ordinance.

"No, I do not ride one," he replied. "But I think they are different from automobiles and should be governed by different regulations."

Pressed for a clearer definition of the difference, he admitted his inability to give it, but insisted that there was a difference.

"Are you going to surrender your power to the Legislature," he asked, plainly glad to get away from the motor bicycle subject, "the inherent power to regulate the traffic in your own streets?"

"The power is already taken from us," interjected Chairman Mathews. "The same body that conferred it has taken it away."

Proceeding, Thompson asserted that the amended charter superseded the Doughty bill, and that there was no law to prevent municipal bodies from passing regulations to govern their own streeet traffic. The license was not for income, but to control operators, and it mattered little what the fee was so long as control was given by power to revoke the license.

"Millionaires can go on killing people and paying $25 and $50 fines indefinitely," he continued, ignoring the fact that imprisonment is provided for a second offense.

"It would be much better for this club, which has made such protestations of a wish to stop the abuses complained of, to come forward with suggestions to improve this ordinance than to criticise it," he said. "I do not claim that it is perfect. But it is drawn so it can be interpreted in a broad and liberal spirit. If things in it are wrong they can be amended. We do not say that licenses must be revoked for offenses committed. This is left to the discretion of the officers entrusted with the enforcement of the ordinance."

Quoting from figures alleged to have been compiled of accidents caused by automobiles, a prodigiously large total was cited by Thompson. Pressed later by The Motor World man regarding these figures, it came out that they had been prepared by a person the mention of whose name would alone cause them to be viewed with suspicion.

A protest from the N. Y. Physicians' Association, levelled at the $10 license fee, which was characterized as being too high, had been received, Chairman Mathews stated.

No one caring to speak further, the hearing was declared closed.

Berg's 24 Models.

No expense is being spared by the Berg Automobile Co., No. 100 Broadway, New York, to turn out the finest car that skill and experience can produce. Designed on the most approved lines, it will really be an improved or 1903 Panhard, the exhaustive study of the best types of French gasolene cars made by Hart O. Berg during his long stay in Paris being reflected in it. There will be two styles, with two and four cylinders, respectively. The cars are being constructed by the Berg company in a portion of the factory of the Cleveland Machine Screw Co., and a considerable number of the parts are being imported. No less than twenty-four styles of bodies will be furnished, the object being to give each purchaser what will be practically a made to order vehicle.

One Estimate of Oldsmobiles.

He is the manager of a considerable automobile establishment in a considerable New England city, and he was not talking for publication; for that reason it would be unfair to use his name, but what he said shows the esteem in which the Oldsmobile is held.

"We are handling the —— (mentioning four well known cars), and have handled the —— (mentioning three others), and if we had to choose between them," he said, "we would drop them all for the Oldsmobile, so highly do we prize the agency. And the vehicle itself is as good as the agency. There are people who 'knock' it, but let me tell you that there is no vehicle that is giving less trouble or more satisfaction. As we have sold about 200 of them, I think I ought to know."

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TROUBLES AND REFORMS

The Former Concern Several French Makers, the Latter the Racing Rules.

French Bureau Motor World,
2 Rue d'Abbeville.

Paris, Nov. 21.—There are rumors that things are not going on so well as they should do with a certain number of automobile firms who are in rather a big way of business, and it is hinted that if they are still able to keep going with an appearance of prosperity it is solely on account of the large amount of capital at their back. Nothing is positively known about the position of these companies, because the balance sheets are never published, and as the stock is in the hands of private holders they do not go gadding about affairs which they say concern only themselves. It is therefore impossible to say exactly what is the situation of the companies whose names are often referred to deprecatingly in automobile circles in Paris. Those professing to be in the know declare that these concerns are on the down grade, and are seeing their working capital diminish in a way that is likely to have unpleasant consequences in the early future. There is no doubt a good deal of exaggeration in these rumors, but as there is said to be no smoke without fire it is very probable that there is some foundation of truth in these statements.

One thing is certain, the manufacturers referred to are making considerable efforts to find a market for their vehicles. This contrasts somewhat strongly with the situation of certain other concerns who sell their vehicles before they are made, and have, therefore, not to worry themselves about disposing of cars in stock. This is simply because they have a reputation, which the others are lacking. In the motor car industry it is useless to expect to build up a permanent business by commercial methods, which usually consist in thrusting goods down the public's throat. Not only must a vehicle fail to become a success, unless it is designed and built to stand hard usage, to which it is put, but the people who buy cars are able to make their own selection, and will only content themselves with the best that can be obtained. They have learned that in automobiles, more than in anything else, the costliest is invariably the best, and that a low priced car, unless it is of good construction, is more expensive than well tried vehicles for which high figures have to be paid. A maker, for instance, who seeks to turn out cars as cheaply as possible and in the greatest number cannot build such satisfactory vehicles as the manufacturer who conscientiously puts the best workmanship and material into every part of the mechanism. Such a car is cheap because the higher initial cost means very little expense for subsequent maintenance; whereas, a vehicle which is merely knocked together by workmen who are inadequately paid for piecework costs more in the long run, owing to the heavy upkeep, to say nothing of the trouble and annoyance to the user. This is the sole reason why some makers fail, and others get practically a monopoly of the business. Some people who have gone into the industry have yet to learn that the motor vehicle demands the highest mechanical and technical skill. Nothing in the way of slipshod work can be permitted, and the firms who turn out cars as they would any other piece of machinery are those who make a reputation and secure the bulk of the trade.

Once a new development in construction has passed through the experimental stage and comes to be regarded as a necessary step toward the perfection of the motor vehicle all the makers are naturally anxious to adopt it; and just now the attention of manufacturers is directed to the suppression of the top speed reducing gear, so that the drive is taken direct from the motor shaft to the counter shaft, or rear axle, as the case may be. The system has, of course, always proved satisfactory for light vehicles, though up till recently only a few makers have made a special feature of this mechanism; but it was long doubted whether it would prove equally satisfactory for big cars. The Mors Company have shown the possibilities of the system by employing it on their new cars, apparently with satisfactory results.

It is naturally impossible to say to what extent the direct drive is responsible for the higher speeds attained by the big Mors vehicles, but the fact of the adoption of the new gear coinciding with these phenomenal speeds suggests that the direct drive effects a decided economy in the transmission of power. In big cars, however, it is still a question whether the direct drive is an advantage except on vehicles built for very high speeds, and for touring cars the majority of users seem to prefer the ordinary system of reducing gear. In the light carriages the conditions are not the same, as owing to the lower power of the motor it is necessary to economize power in every possible way, and the effort being much less considerable than in the big cars the gear is not subjected to a high strain when driven direct, as in the heavy cars. The system has proved so uniformly successful in light carriages and voiturettes that it seems likely to come into almost general use. Quite a number of firms are making a special point of the direct drive in their light vehicles, and this will be one of the features of the forthcoming Show, and as one change usually brings about another, so the direct drive on the top speed is being accompanied by the adoption of the shaft transmission, which greatly simplifies matters when there is no necessity for an intermediate gear.

The Automobile Club of France is carrying out important changes in the racing regulations which are likely to add greatly to the interest of future contests, at the same time that they will undoubtedly give more satisfaction to the majority of manufacturers. Until now the vehicles have been divided into different categories, and there has only been one winning car in each class, but in future each maker will be required to run a number of vehicles, probably four, and the results will be calculated according to their aggregate performances. Thus, if all four cars of the same make and type complete the course the times will be added, and it is upon these aggregate totals that the results will be based. Individual performances will count for little. Supposing some of the cars fail to complete the course the times will be taken for each car up to the control beyond which they stop, and from that point they will be penalized for the remaining distance, that is to say, if they stop 100 kilometres from the end of the journey the distance will be calculated at, say, ten kilometres an hour, and thus ten hours will be added to the official time taken at the control where the car broke down. The results will therefore be based upon the fastest aggregate times of the different teams, and the distances they cover, so that the races will in future be in every respect contests of reliability. The driver of a car arriving first in a race will, as usual, get covered with glory, but this can only be regarded as an honorary victory, since unless the other cars of the same make and type do well the team may be beaten by another which finish the course in a better aggregate time. The race will, of course, lose none of its sporting character, but it has been found necessary to draw up these new regulations, as it is clear that speed is only an evidence of progress when it is accompanied by reliability, and thus speed and reliability are twin factors which will be taken into account in future contests.

The last record attempt on the official route at Dourdan was accomplished by Augières on his Mors, when he covered the kilometre in 29 seconds, which beats the record held by Fournier by one-fifth second. It is probable that this is the last record run of the season, for the Prefect of the Department has just intimated that these "race meetings" must cease. As is usually the case, automobilists have perhaps been trespassing too much upon the tolerance of the authorities, who were disposed to say nothing so long as the record spins were merely isolated attempts, but during the past few weeks some dozens of cars have been at Dourdan every day waiting for a favorable opportunity to beat records, and as they took entire possession of the road the Prefect apparently thinks that they have gone a little too far. It is suggested that the Automobile Club should purchase a private road traversing the forest parallel to the public highway and similar to it in every respect, except that the surface will have to be remade. This, however, is only a small matter for such a rich body as the A. C. F., and it is hoped that before long we shall have a private official track where automobilists will be able to go for the records without let or hindrance.

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HUNTING FOR EAGLE ROCK

How the New York Reporters Reached the Hill and the "Fun" They Had.

By special invitation from E. B. Gallaher, the new general manager of the Mobile Co. of America, the press representatives made the trip from New York to the scene of the climb in two Mobile wagonettes. The start was made from in front of the Motor World offices, under cloudy skies, at 8.30 a. m. Accompanying the wagonettes were two runabouts that were entered for the contest, one of them having a kerosene burner that it was desired to test.

The route lay across the Desbrosses street ferry to Jersey City, then over the old plank road to Newark; thence to Brick Church and out to the hill.

Such a ride as it was! One wagonette had six passengers and the other three, until one of the six deserted. There was a forlorn ignorance on the part of all as to the route, although a couple of the daily paper representatives had written detailed descriptions of it. The consequence was there was a ridiculous amount of inquiring done all the way. The notoriously vile plank road was in a more deplorable condition than ever, if that be possible, and, being soggy from the rain, was on its worst behavior. The mud and water splashed up in inky sheets from between the loose planks until it seemed as if the machines were running through a field of young mud geysers.

At a place where a janitor was flushing the walk with a hose both machines stopped for water, and there one man thought he would be foxy by shifting from the heavier carriage to the lighter one, believing it had a better chance to make time. A mile beyond this the heavyweight wagonette came to grief. A stop had to be made to tinker with the gasolene feed valve. The wind was bitterly chill, and to make matters worse it began to rain. There was no sheltering refuge at hand, and the passengers had to sit there and take the gibes of the passing truckmen and pedlers, who cried: "Get er hoss!" Three stops of this sort were made of varying duration. On one occasion the pilgrims got a meed of satisfaction by finding a truck with one wheel stuck in a rut. The mobilists in a chorus yelled, "Get an automobile!" but were charitable enough to put their hands to the spokes and help twist the wheel out of the hole.

The destination finally was reached, and as the hill climb was late the belated party was on time, but folks along the route must have thought that there were a lot of people from New York out in automobiles on Thanksgiving Day looking for Eagle Rock, because each of the four carriages made inquiry as to direction about once every half mile.

The trouble with the delayed carriage was a trivial one, and the other three went through the mud and wind and rain without a hitch, and all were thankful for the courtesy of the Mobile company.

Is Storage Profitable?

"'So-and-So,' seems to be doing well with his garage, as I notice it is filled with cars on storage," remarked a visitor to the manager of one of the biggest automobile stations in New York City.

"No, he isn't. He's losing money. There is not a storage shop in town that makes money. There is absolutely nothing in the storage game. Rents are too high and monthly rates too low. You cannot make a place pay unless you are selling all the time. We have demonstrated that."

"But," said the surprised visitor, "the demand for storage warehouses is increasing with the selling, and there has got to be a number of them. Is that not so?"

"Yes, but the prices have got to go up. They are far, far too low. Hire a decent place in the centre of the uptown district, where you can do good business, a place big enough to put two dozen machines on the floor, and your rent will be almost or quite as much as what you can get for storage at the prevailing rates. I tell you, prices in the business are too low all around. It's an expensive game at present, and no effort should be made to cheapen it until later, when everything has become more nearly standardized. You not that several makers have raised their prices for next year. Well, they have got to go higher up. You may take this as only one man's opinion, but mark the prediction."

Inserting Water Gauge Glasses.

To put in a new water gauge glass of the ordinary type first remove the broken glass and take off the packing nuts. The india rubber rings which form the water-tight joint must be removed, and, if damaged, replaced. The packing nuts should be put on the new glass, open ends outwards, and the packing rings slipped on to the ends of the glass, which should then be placed in position. Screw up the packing nuts carefully. The automatic check valves will be down on their seats, and must be released. To do this screw down the small hand wheel above each valve three or four complete turns, which will release the valve. Unscrew the hand wheel to its original position. If the gauge glass is put in while the boiler is under steam release the lower check valve first to admit water. Steam is liable to crack a new glass.

Iron vs. Air Tires.

Experiments made by M. Michelin show that 2.29 horsepower is required to propel a vehicle one ton in weight at a speed of ten miles an hour with iron tires. With pneumatics the same conditions require 1.72 horsepower. Solid rubber tires are not dealt with in this experiment, but by taking a line through other results they appear to lie between the two, somewhere about 1.5 horsepower. The tractive resistance of solids, taking pneumatics as 100, is 129.8.

Y HIS HEART JUMPED

The Optical Delusion That Caused an Operator to Think His End Had Come.

"After an experience I had last week I feel pretty sure that there is nothing the matter with my heart," remarked an autoist to the Motor World man. "Had it not been perfectly sound I am very much afraid I should not be here to tell the tale.

"I was making a little tour through New England, and we were going along at a moderate pace, the road not being particularly good. Going through a patch of woods I thought I heard a locomotive whistle, but did not pay very much attention to it at the time. A hundred yards or so further on we emerged from the woods and swung around a slight turn and up a sharp, short grade. At its summit a sight met my eye that sent my heart, in spite of its soundness, into my mouth.

"Right in front of our car, so close that we were within half a dozen feet by the time I was able to realize it, was a railroad track. And about twenty yards up that track was a freight train, coming directly toward us.

"It seemed too late to stop, and yet equally impossible to get clear of the tracks before the locomotive reached us. For an instant I hesitated, hand waiting on brain, the latter debating whether to reverse and clap on the brakes or to give her full speed ahead and try to clear. It probably took but an infinitesimal part of a second, and I was already putting the latter expedient into effect when I saw what lifted the cyclopean weight that was pressing upon my brain and benumbing my faculties. The train was sheering away to the left, instead of plunging through at me!

"The explanation was very simple. The track we were by this time crossing formed one arm of a Y, while the main line, on which the train was running, formed the other arm.

"Seemingly aiming straight at us, the train, therefore, swung to our left, instead of to our right. Thereby it saved our lives, I do believe. Either the front or the rear of our car would have been struck had the train passed over our part of the Y. I leaned back in my seat, feeling queer qualms at the pit of my stomach. 'A bit too close for comfort,' was the remark I made to my companion. He assented. He looked a trifle blue about the gills, I thought."

Denaturizing Alcohol.

The denaturization of alcohol is accomplished by mixing with the spirit a small proportion of some foreign substance, which, while not injuring its efficiency for technical uses, renders it unfit for consumption as a beverage. The denaturizing substances employed depend upon the use to which the alcohol is to be subsequently applied. They include pyridin, picolin, benzol, toluol and xylol, wood vinegar and several other similar products.

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WHEN THE CAR SKIDS

Exactly What Happens, the Causes Thereof and the Available Remedies for the Sideslips.

A skilful driver is in touch with his car; he can feel every movement, every tendency to swerve; as a rule the car gives him ample warning of its troubles with the road surface. If he fails to take note of these warnings by reducing his pace and keeping an absolutely steady track, then he may come to grief. It is this intimate approchement between the care and its driver which is the essence of a successful and secure chauffeurship; without it one is in the same predicament as a man without knowledge of riding who is on a mettlesome horse; he does not know what will happen next.

Side slip is mostly governed by known laws, and generally happens under one or another of the following circumstances: If the road be greasy and the car travelling at a good speed the driver attempts to change his course, and does this too abruptly. Owing to the state of the road the guiding wheels fail to grip the surface—they slide or skate—the driver thus loses control of the steering—the body of the car or centre of gravity pursues the general course that the driver tried to deflect; the front wheels being, so to speak, pushed aside and the centre of gravity acting as a sort of pivot on which the car turns, and this pivot continues its straight course, affected a little by the varying degrees of greasiness of the road. On a piece of ice of even surface the pivot or centre of gravity would continue its course in an absolutely straight line.

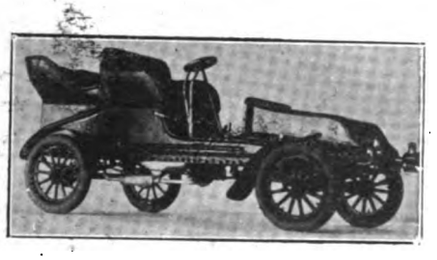
The other conditions causing side slip are when the two driving wheels are in contact each with a road surface of different degrees of gripping quality. The wheel which has a firm grip drives the car, while the opposite wheel merely turns in the mud. This produces a side thrust, which, if not counteracted by the front wheels, will turn the car round. Should the front wheels be on dry and level ground, the course of the car is kept, in spite of the slipping of one of the driving wheels. Should this condition arise on an upgrade the car will become, as it were, restive and difficult to steer, the reason of this being that most of the weight is off the front wheels. Consequently these have little control of the ground, and the back driving wheel, which is working on a good gripping surface, twists the car in the direction it wills.

The remedies for side slip therefore are: Never abruptly change the course of a car on a slippery road. In meeting or overtaking an obstacle begin to change your course very gradually, and long before you reach the obstruction throw out your clutch and apply your side brakes slowly and feelingly, releasing them immediately a tendency to independence comes over the steering.

The countershaft brake should only be applied in an emergency, as it may lock one wheel and allow the other to turn. It only acts through the differentials. In ascending a greasy hill where the road surface is greasy in patches, as described, climb at the very slowest pace that is felt to be safe.

Dr. Brandow's 3-Pound Winton.

In addition to his professional capacity, Dr. Frank H. Brandow, president of the Berkshire Automobile Club, of Pittsfield, Mass., possesses mechanical ability of no mean order, and when early last summer he stated to the members of the organization, that being dissatisfied with the motor vehicles turned out by the different manufacturers, he proposed to build one that would eclipse all others, considerable curiosity was excited. Last week he announced that it was completed and invited a few of his intimate friends to the workshop in the rear of his residence, where, mounted on a pedestal, was disclosed the doctor's ideal—a miniature reproduction of the Winton touring



car, weighing about three pounds, 12 inches in length and perfect in every part.

The machine was built by Dr. Brandow during the last few months from drawings made by Louis E. Laflin, of Chicago and Pittsfield, and is an exact counterpart of the latter's racing automobile. All of the fine details were carried out, including levers, brakes, steering gear, throttle, spark advancer, etc. The upholstering of the cushions and seats is unusually rich and handsome, and the brass work is prominent, including the side lamps, which are gold plated. The body of the carriage is a rich maroon, with dark striping and a highly polished finish. Considerable difficulty was experienced in getting tires for the wheels, but this was finally made possible, a special set being made to order.

This little Winton is not Dr. Brandow's first effort. He had previously made miniature models of the famous locomotive, "999." the City of Paris and City of Berlin, ocean steamships, all of which were built from drawings of the originals.

Some drivers are so optimistic that when their ears tell them that there is something wrong with their cars they keep on, hoping that the trouble will disappear. Sometimes this does happen, but very rarely. The rule is for matters to get worse instead of better. A little investigation and a few minutes spent in adjusting or tightening or cleaning will sometimes save a lot of time and money in the end.

WINTER CARE OF TIRES

When Long out of use or Seldom Used What may be Done to Prevent Deterioration.

With the oncoming of winter many autoists wonder how tires should be treated to insure them against deterioration. If the car is run but seldom it is a good plan to jack it up so that the wheels do not support its weight, and the fabric liners are not continuously under stress. Four wooden tripods, shaped at their apices to take the front and rear axles at points close up to the wheels, are the simplest and least expensive means of doing this. It is not necessary to deflate the tires.

When the car is out of use for several months before storing the car it is advisable to take down the tires and make a careful examination of the covers, inner tubes and rims. If the first named two require repair of any description this opportunity should be seized for having the work properly done. With regard to the rims, remove the protective band if there is one, and revolve the wheel slowly in search of places where the overturned edges may have flattened, and test them all round with the thumb to see whether or not the edges have grown sharp and cutting. In the first case, bend up the overturned edge with a pair of strong pliers, and round off the cutting edges by means of a file.

In nearly every instance it will be found that the rims are rusted, and rust exerts a very evil effect upon the fabric in the tire, for it causes it to rot. In this case rub the interior of the rim, and particularly the surfaces of the overturned edge, carefully with emery paper, removing all traces of rust, then coat with two coats of white lead paint, finishing with one of varnish. The covers and inner tubes should be carefully wrapped up in paper, and placed in a cool place away from the sunlight.

If so wished the tires may be replaced on the rims, but if this be done the car should, of course, be jacked up off the ground and the wheels well protected with the cover of the vehicle to shield them from the light.

When the Engine is Over-oiled.

When an engine has been overoiled and the plug is found to be sooted badly in consequence, it is desirable not only to clean the plug before replacing it, but also to rinse out the cylinder with some kerosene. With many cars this can be done from the kerosene pump on the dashboard. In others which do not possess this convenience it is often possible to pour some into the cylinder. If kerosene is not available gasolene may be used. A few turns of the starting handle can then be given so as to spread the cleansing fluid over the interior of the cylinder.

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Regarding Lubrication.

The value of any liquid for lubrication depends to a great extent on what is known as its viscosity. This is a property by which the liquid resists alteration of shape. It is not the same as cohesion; this latter resists the pulling apart of the molecules composing the liquid, while viscosity opposes their flow relative to each other.

This ability to resist flow is very necessary, or otherwise the lubricant would too readily squeeze or thin itself out, and thus let the surfaces come into contact—the thing to be avoided; also it would feed too fast if it were too thin, or had too little body, as the phrase goes. A simple illustration may be observed by dropping onto a smooth plate small quantities of water, olive oil, castor oil and molasses. The water immediately diffuses itself over the plate, the other liquids taking much longer time, in the order named.

It is not merely the viscosity of a liquid, however, which determines its value for lubricating purposes, but rather a property which may be called oiliness or greasiness in the case of solids such as butter, tallow, etc. This property it is that enables the liquid to maintain a film of appreciable thickness under pressure. One can readily see that a liquid may be very sluggish in flowing and yet have but little if any permanent body. Glycerine, for example, is more viscous—has more body—than lard oil. If a quantity of the former were dropped onto a smooth plate, and another plate quickly brought in contact with it, the glycerine would oppose quite a resistance to flowing out, much more than the oil; but in the end it would do so more completely and thus fail to leave as thick a film between the surfaces as would the lard oil.

This inability to stand up permanently against a high pressure is the item that makes it less valuable as a lubricant than lard oil; besides, it would not feed as freely through wicks, etc. Water placed on a clean surface quickly spreads all over it. Kerosene does the same to a somewhat less degree; neither, however, is able to maintain a film of any appreciable thickness under pressure. To realize this, wet the thumb and finger with one of these fluids and rub them together forcibly. There will soon be experienced a certain resistance to the motion. This frictional resistance is due to the fact that the fingers have come almost perfectly into contact and the friction has become "solid" rather than "fluid."

When, however, a more fatty oil is employed (lard, rape, etc.), or butter, the substance will not squeeze out so thoroughly, the flesh does not come into actual contact, the resistance to motion is less, and it is said that the substance is greasy, or, as above stated, has the property of greasiness or oiliness.

The viscosity of an oil or grease changes with temperature. With a rise of temperature the lubricant achieves the power of flowing more easily; that is, it gets "thinner" or has less body. This important consideration demands that the nature of the lubricant be changed according to the seasons, which is, accordingly, done, a thinner oil being used in winter than in summer.

Castor oil is an admirable lubricant when the conditions permit; that is, in a temperate climate, and on very heavy machinery where the pressures are high. It can also be used for lighter pressures when the temperature is high, as in southern countries. Here the heat thins it down sufficiently to feed well, and it is accordingly much employed for locomotive and other light uses, being mixed with a proportion of mineral oil.

Also when the engines or machinery run in very hot sheds or engine houses, an oil of considerable viscosity may be adopted, the extreme heat thinning it down when in the bearings, to a required degree. As regards the effect of temperature, testing plants have shown that its influence on the frictional resistance of the bearings is considerable. The higher the temperature, the less the frictional resistance; this has been attributed both to the decreasing viscosity of the oil and also to the bearing expanding more rapidly in diameter than the journal.

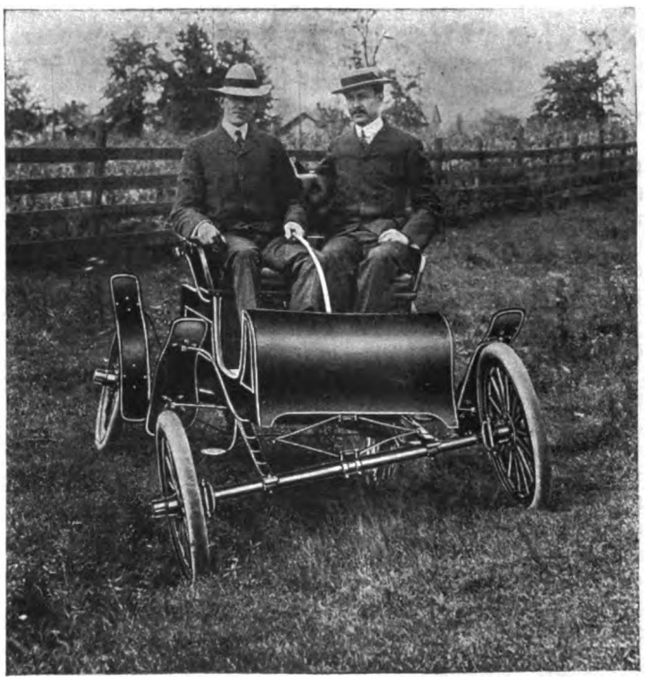
When Fuel is Wanted in France.

A timely hint to autoists travelling in France is to ask for "essence" when desiring to replenish the stock of gasolene. The average Frenchman would not know what "gasolene" meant, while if the English term, "petrol," was used there would be danger of getting kerosene.

About Alcohol.

Theoretically, alcohol has only three-fifths of the thermal value of petroleum, but it has been found that for motor purposes 28 per cent of the theoretic energy of alcohol can be utilized against a maximum of 15 per cent in case of petroleum and its products. This advantage in favor of alcohol is still further increased by an admixture of 16 per cent of benzol. Another important advantage of alcohol, which applies specially to its use in motor carriages and in engines for small manufacturing plants in premises adjacent to dwellings, is its absolute cleanliness and freedom from the mephitic odors which render hydrocarbon engines so offensive to many people.

Cutting Across a Detroit Lot.



Messrs. Barbour Demonstrating the Flexibility of the Northern Running Gear.

How he Boomed the Battery.

He was new to the game, and, as he put it, was determined to get acquainted with everybody right away. In that laudable endeavor he had paid several visits to the dispensary of liquid refreshments at the corner, while waiting for the Eagle Rock contest to get under way, and he was very "mellow."

"Let me give you some of our circulars," he would begin, whether to a newcomer or one he had already delivered himself it made little difference. "We have the best battery there is in the world. We are determined that every automobilist in the land shall know of its transcendent merits, and are taking this method of bringing it to your attention. Just read these circulars over, and if you want to try our goods bring them along and they will secure you special prices at our headquarters. Now, don't think they are no good, for they are, and I tell you so."

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WHY "MIXTURES" VARY

Some of the Causes Affecting the Explosive Charge and how They may be Overcome.

While perfect ignition apparatus has much to do with the proper working of gasolene motors, it should never be forgotten that the explosive charge is worth study and attention. The conditions involved are correct mixture or proportion of gas and air; proper compression of the charge; purity of the compressed charge—that is, there should be as nearly as possible a complete expulsion of the residue, or burnt gases, of the former charge, in combination with a full new charge of fresh mixture; complete combustion of the charges in combination with rapid expansion, that there shall be a resultant fall in temperature and a maximum utilization of heat in performing work.

The correct mixture of air with vapor or gas can only be approximately expressed because of the variable nature of the conditions as to temperature of the atmosphere, nature or quality of the gas or vapor, number of atmospheres of compression and the means used for inflaming that compression.

With ordinary coal gas the mean figures for proper mixture are 8 parts of air to 1 part of gas, while for the richer vapor coming from gasolene the means are 10 to 1, but the explosive limits cover a wide range of proportions. That is, there may be as rich a mixture of gasolene as 4 to 1, or as thin a mixture as 14 to 1, and yet there can be explosions. While these are the generally accepted figures, the exact proportion, however, is of little practical value in handling vehicles, or more correctly speaking, the conditions vary so much that a proportion cannot be arbitrarily laid down, but must be determined by experimenting if the very best results are aimed at.

For example, in starting a motor in cold weather the charge must be very rich in vapor at first, but after the motor becomes heated the quantity of gasolene can be reduced with advantage. On warm days the proportions will always be wider apart, particularly when starting. Other conditions exist which make it essential that the mixture shall be variable from time to time and under direct control of the driver. For these reasons an owner who desires to always get the best results, most power at the expense of the least gasolene, should study his motor under varying weather conditions and varying mixture proportions, and note results. A few trials will fix them in mind for use at all times.

In starting the motor with the compression cock open, the suction stroke of the piston draws in air through the cock in addition to that in the mixed charge from the carburetter. This naturally impoverishes the mixture and it becomes more certainly explosive when an extra admission of vapor can be given at the carburetter. After the cock is closed the conditions are again altered and demand a readjustment of the proportions.

This is no doubt the reason that causes many motors to misfire after closing the cock. That the misfiring comes from closing the cock rather more than from the first opening is undoubtedly due to an almost invariable tendency toward feeding the motor with a too rich mixture in order to insure a start. Then the closing of the compression cock and the heat generated by the first explosions calls for a greater percentage of air, and unless this is understood and attended to at once there comes the trouble in getting the vehicle going. This is particularly true in warm weather.

This condition calls attention to the claims of those who use the exhaust valve lifter to relieve the compression in starting. With this device the compression cock is not used, and consequently the mixture remains uniform all through the process of starting. It is only necessary to find a mixture which is explosive and then the ratio does not have to be immediately altered. It is nearly constant, being only influenced to the small extent due to the heating of the cylinder and the variations of the atmosphere. These are both so gradual that ample warning is given to make the necessary changes in the gasolene feed.

Another condition which no doubt has a distinct effect on the explosive mixture is the proportion of burnt gases or products of combustion remaining in the cylinder or in the combustion chamber from the previous power stroke. Although motors vary considerably in design in relation to the comparative areas of the cylinder and the combustion chamber, it is manifestly impossible with present construction to entirely expel the products of combustion. And such remnants of a former charge must act as an adulterant to the incoming charge, if there takes place any real mixture of the two. As to the latter point, however, there would seem to be no conclusive evidence or agreement. Some experts assert that a partial mixture takes place, while others are of the opinion that the residue of the exploded gases is drawn down bodily by the suction stroke of the piston, so leaving the combustion chamber and upper part of the cylinder to be filled with a fresh explosive mixture which lies on top of the exploded gases.

It is possible that what really does take place is a compromise in which the central body of the unexpelled burnt gases descends with the piston with the walls of the cylinder head and combustion chamber holding a part and the remnant of that body being held up in the top of the combustion chamber by the inrush of the new charge. In this case it is most likely that the fouling of the charge will be in the cavity around the spark plug—that is, in such motors where the plug is screwed into the side chamber out of line with the cylinder bore.

If this is the case, then there is good reason in the suggestion that the plug should be screwed into the combustion chamber at the central head in place of the side extension for the passages, and that in either case the points of the plug should be extended further in than is at present the general rule, that the spark may be insured to take place in the fresh mixture. From the testimony of those who have tried the latter, it would seem that the theory of the bodily drawing down of the exploded charge is disproved.

The proper working of the valves of course greatly influences the question of the quality of the explosive mixture. With the automatic inlet valve in perfect working order, and other conditions corresponding, the maximum amount of new mixture will be drawn in at each suction stroke of the piston. But if the inlet valve spring be too stiff, thus diminishing the amount of mixture taken in, in conjunction with a too short period of opening of the exhaust valve, then the power stroke will be weak and inefficient by reason of the curtailed supply of explosive vapor due to the first condition, and the excess of unexpelled products of combustion due to the exhaust valve closing too soon and so setting up a certain degree of compression on the exhaust stroke.

Causes of Poor Compression.

Bad compression is indicated by the motor running poorly and giving but little power. It generally results from badly seated valves, worn piston rings, or bad joints. To test the compression leave the compression tap or release closed, the valve lifter down, or whatever means are adopted for relieving compression for starting purposes out of action. Take the starting handle and gently turn round the crank shaft until resistance is met with; continue the pull upon the handle and note the length of time the resistance is maintained, and the amount of power necessary to overcome it. The longer the time and the greater the strength required to overcome the resistance the better the compression and the more powerful the motor. The compression of each cylinder in a multi-cylinder motor may be tested by opening the compression taps, kerosene taps, or removing the sparking plugs in all the cylinders excepting the one to be tested, and proceeding as above. The time and resistance of each cylinder should be as nearly equal as possible.

To Keep Steamers at a Standstill.

To prevent the starting of a motor vehicle by other than the operator is the design of a Providence, R. I., man's invention.

With this device it is said to be impossble for the machne to run away when the operator leaves the vehicle, and should the hand-lever be tampered with during his absence, so as to throw open the throttle valve, the steam or gasoline can get no farther than the chamber of the casing, thus preventing the engine from moving the machine. When the operator takes his seat, his weight depresses the seat, and opens the valve, after which he pulls the hand-lever to open the throttle valve and allow the steam to pass through the ports of the casing direct to the engine.

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COMMITTEE'S RECOMMENDATIONS

Suggestions for Future Contests Based on Experience Gained in Recent Reliability Run.

In all probability the report in full of the reliability contest committee of the Automobile Club of America will not be ready to be given out until next week. The committee, consisting of Messrs. Scarritt, Chamberlain and Hill, has, however, made a number of recommendations for future contests, based on the recent Boston run. The most important of these follow:

First—That A, B and C certificates be abolished. So many contestants will in the future be able to qualify that even an A certificate will have but little value.

Second—That gold medals and not cups be awarded to winning contestants by the club.

Third—That the observers should be changed daily. This could be readily accomplished by taking the badge from the first arrival at any control and making an appointment to supply him with a badge after the arrival of the last carriage; then giving the badge of the first observer to the second, taking the second observer's badge and giving it to the third, and so on.

Fourth—That the noon and night timekeepers be kept separate, and that the noon timekeepers travel from noon to noon control, and under no circumstances be permitted to sleep at the same point occupied by the night control.

Fifth—That specific instructions in writing be given timekeepers, so that they do not make mistakes in getting their green and red flags close together; and that the head timekeeper be put in charge of the water and gasoline supply and held responsible for their proper distribution.

Sixth—That an automobile be sent over the course two or three hours in advance of the contestants to replace arrows.

Seventh—That competition among contestants for early or first arrival should be discouraged. This could be done by arranging so that those that arrived first on one day be not permitted to start first at the next control. Two lines could be formed on starting, either the right or the left hand line, as they see fit, or they could start the whole right hand line before coming to the left hand, where an anxious contestant, who wants to arrive first, is located.

Eighth—That no time allowance of any kind be permitted in any rules that may be adopted; that our ideal be perfection, as all ideals should be.

Ninth—That as much as possible the emphasizing of no stops should be avoided, and that conditions meeting the average touring conditions should be, as nearly as possible, made. What is needed is a careful record of the actual work done to the car and the amount of adjustment necessary.

Tenth—That more perfect police protection be secured at controls on arrival, and that cars should be required to pass the flag rather than to approach it in groups of two or more.

Eleventh—That after passing a time flag there should be a distance of at least 300 feet to the water plug and an interval of at least 200 feet between the water plug and the gasoline supply, and that the observer and the driver be not allowed to leave the car under any pretext whatever until supplies are put aboard.

Twelfth—That no cars be allowed in any run without a reliable cyclometer, the reading of which should be observed, and which will in itself indicate whether any detours have been made from the regular road, and, if so, how much.

Thirteenth—That in making up a road book of any particular run, where the return trip is in reverse order to the outgoing, the book should be rewritten in reverse order, as it is impossible to read backward, as was necessary in our last endurance test.

Fourteenth—That in contests where the route is marked at a point 200 yards in advance of dangerous places in the highway a yellow flag, bearing the word "Caution" should be displayed.

Fifteenth—That if a contest where reliability marks are given, at points of one mile and two miles from the control, a blue flag be displayed, bearing the figures "1" and "2," respectively, in order that contestants may know exactly the distance to the control.

Sixteenth—That the rules require that the observer's books be provided with carbon sheets, and that a copy of the record of the performance of each car be publicly posted on the arrival at each control, for the information of the public and the press.

THE WELL-KEPT CAR

Readiness With Which it Starts one of the Signs of its Care and Condition.

Sometimes an excellent line can be had on the quality and the condition of a car by watching its operator start the engine. With some cars a quarter of a revolution of the crank, or even less, will do.

It was only the other day that a two cylinder car with tonneau body, standing in front of a banking establishment in Wall street, afforded an illustration of this kind. The leather coated chauffeur walked to the front of the car, took hold of the crank, gave it a short, quick turn that caused it to travel certainly not more than a dozen inches, and the explosions came immediately and with that regularity that is so dear to the heart of the expert driver.

But more directing, if less edifying, spectacles are witnessed almost every day. Who has not seen a driver tugging at the crank, turning it with all his strength and stopping only when he is almost ready to drop from exhaustion? The crowd that gathers so quickly watches and offers all sorts of suggestions. In the end the recalcitrant engine always reconsiders its refusal to go, and the car is got away on its journey. But the occurrence leaves a bad impression on everybody who sees it.

When it is not the fault of the chauffeur the trouble belongs at the door of the car. Bad compression and weak current are the most frequent causes of starting difficulties, and of these the former means loss of power. On this score alone it pays to have an engine in such a condition that it can be readily started.



A. L. Dyke's 30 h-p Combination Racing and Touring Car.

Weston's Lead Pencil Illustration.

No greater enthusiast than Frank F. Weston can be found. He fairly bubbles over with enthusiasm, exudes it from every pore.

"Come around and see the new Yale gasolene car at the show," the Motor World man heard him say, at the Eagle Rock contest last week, to a man who had confessed that he was looking for something good in the gasolene line.

"Slickest two cylinder car you ever saw. Smooth as if it ran on rails. Why, there is so little jar from the motor that you can take a lead pencil, stand it on end on the floor of the car, and start the motor without knocking that pencil over! You could not want any better proof than that, now, could you?" and his auditor admitted that he could not.

After running a new car a few hundred miles it is advisable to drain all the lubricant out of the gear box, wash the latter out well with kerosene, and, having allowed the gear box to remain open and drain, to replenish with fresh lubricant.

W. & J. Cook have purchased the automobile and bicycle repair business of H. F. Sembler, Torrington, Conn.

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How the Wig-waggers Obtained Current.

A novel method of obtaining current was practised by the Second Signal Corps—the "wig-waggers"—of Brooklyn, N. Y., last week. An exhibition of "wig-wagging" was being given, during which nineteen different methods of signalling were shown.

The electric current for the searchlights and other signals was generated by an automobile by attaching a belt to one of the hind wheels of the automobile after it had been jacked up two or three inches from the ground. The trailer, so called, in which were concealed the small dynamos, is hooked on or off the automobile at will. When it is brought into use for the signalling the belt is attached to the dynamos and the power is generated from the current which propels the automobile.

When Batteries Weaken.

A useful tip is that in the event of misfires occurring through a reduction of voltage at an inopportune moment, sparking can always be improved by setting in the points a little closer. Especially is this the case when dry batteries are used, and their use may be considerably prolonged if the trouble of setting in the points when the spark gets weak is put up with. One autoist made a rough gauge on a pocket knife, scratching a mark on the base of the blade for the distance of the points when the batteries were new. As the battery power decreased the sparking gap was correspondingly reduced until the cutting edge of the knife blade was reached. This point was absolutely the last gasp of the battery.

There is said to be a great increase in the number of motor cars in Johannesburg, South Africa. Gasolene is so expensive, costing nearly $1 a gallon, that a cry is raised for cars that will use kerosene.

The Lewises' New Motor.

By the manipulation of a valve so constructed that when it is open "no air is allowed to enter the mixture, but a sufficient amount of the compression is allowed to escape," the starting of the gasolene engine invented by Albert and Shirley S. Lewis, of Syracuse, N. Y., is said to be made easy. This engine, and also a complete motor vehicle, will be manufactured and marketed if the negotiations pending between the Lewises and capitalists are brought to a successful conclusion.

The engine is so fitted that at the application of the power a slight turn of the belt wheels is sufficient to put the machine under headway, says the description. There is fitted a valve at the top of the cylinder head which is operated by a lever attached to a cam at the top of the side shaft.

When it is desired to start the machine this lever is pulled down as desired and the spark turned into the head. The lowering of this lever has opened the valve at the top of the cylinder and caused an exhaust at the first revolution, so that the turning of the starting wheel is now against only a sufficient amount of the compression to cause the first explosion and movement of the piston. This insures a start every time and calls for no exertion on the part of the operator beyond a slight turn of the wheel.

The gas mixture is composed of about six parts of gas to one of air, and the opening of the ordinary valve more or less air enters the mixture, rendering it useless. But through the valve on the Lewis engine no air is allowed to enter the mixture, but a sufficient amount of the compression is allowed to escape to insure the starting, rendering the first explosion weaker than normal, but sufficient. By the use of this valve when the engine is working the speed may be increased or decreased at will.

From Porto Rico to Providence.

The People's Rapid Transit Co. of Providence, R. I., the incorporation of which was noticed last week, is really a reorganization of the Porto Rico Transportation Co., which was formed in Olneyville in 1901, for conducting an automobile passenger and express service between Ponce and San Juan, on the island of Porto Rico. About $20,000 was sunk in the project. The new company will operate the same automobiles in Westerly, and between the town, Watch Hill and White Rock.



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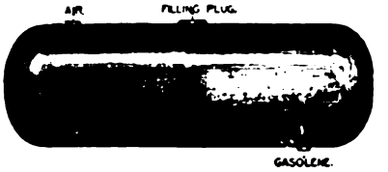
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The Week's Patents.

714,128. Exhaust-Muffler. William Barber, Brooklyn, N. Y. Filed Jan. 23, 1902. Serial No. 90,925. (No model.)

Claim.—1. An exhaust-muffler provided with an inlet pipe or tube having perforations in its peripheral wall, and a baffling spring of resilient material coiled around the inlet pipe or tube in such manner that the gases as they emerge from the peripheral perforations or passages will impinge upon the spring, substantially as shown and described.

714,164. Pneumatic Tire. Wilbraham Edmund, Ealing, England, assignor to himself, and Alister Macnab, London, England. Filed Jan. 3, 1901. Serial No. 41,963. (No model.)

Claim.—1. In a pneumatic tire, the combination of a transversely inflexible and longitudinally flexible and compressible tread having a wide practically flat inner periphery and separately inflatable air tubes each made of air retaining and laterally inextensible material, arranged one inside the other, and adapted to take a flat bearing against the flat inner periphery of said tread, substantially as described for the purpose set forth.

714,180. Internal Combustion Engine. Clark Hendricks, Riverside, Cal. Filed December 11, 1901. Serial No. 85,512. (No model.)

Claim.—1. In combination a power cylinder having an igniter and also inlet and outlet ports at one end, means for supplying an explosive mixture to said inlet port, a conduit for a power liquid connected to the other end of the cylinder, a valve or valves between this conduit and the cylinder, a valved supply-pipe or pipes connected to the end of the cylinder adjacent to the said conduit, an air chamber connected to said conduit, a sliding power piston in the cylinder provided with a piston rod working through the cylinder head at the liquid end of the cylinder, and means connected to this piston rod for automatically controlling the gas supply and exhaust devices, for the purpose set forth.

714,201. Storage Battery. Stanislaw Laszynski, Berlin, Germany, assignor to Titus von Michalowski, Berlin, Germany. Filed Feb. 23, 1901. Serial No. 48,611. (No model.)

Claim.—1. A storage battery having a negative electrode of nickel oxid, a sponge-zinc plate as positive electrode and as electrolyte a solution of potassium or sodium aluminates, which are able to conduct the current, but not to dissolve the sponge-zinc electrodes after discharging.

714,237. Steam Boiler. Charles M. Raymond, Cleveland, Ohio. Filed July 3, 1902. Serial No. 114,233. (No model.)

Claim.—1. A tubular boiler comprising a plurality of superposed sets of coils, each having an upper and a lower coil, and a connection between the upper coil of one set and the lower coil of the next set below, substantially as described.

714,271. Vehicle-Wheel. John M. Alderfer, Sharon Center, Ohio. Filed May 9, 1902. Serial No. 106,528. (No model.)

Claim.—1. In a vehicle wheel, the combination with a channel iron rim, of a cushion tire, and pins extending transversely through the tire, the length of the pins being greater than the distance between the free edges of the side pieces of the channel iron rim, the base of said channel iron being provided with an annular rib through which said pins project and thus prevent the creeping of the tire with respect to the channel iron rim, substantially as set forth.

714,333. Vehicle Tire and Rim. Franklin G. Saylor, Franklin, Mass., assignor of one-half to George H. Morrill, Jr., Norwood, Mass. Filed Aug. 22, 1902. Serial No. 120,647. (No model.)

Claim.—1. A vehicle tire having a fibrous core, clamps upon said core and an outer covering of rubber vulcanized around said core and clamps, substantially as described.

714,352. Combined Hot Air and Gas Engine. Charles A. Anderson, Erick A. Erickson and John Wickstrom, Chicago, Ill., assignors to Chicago Motocycle Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 28, 1900. Serial No. 10,570. (No model.)

Claim.—1. In combination with a cylinder and a pair of pistons arranged to work therein, means for controlling said pistons to impart a synchronous but differential movement thereto comprising a pitman support upon each piston, one of which is in the form of an extension whereby the pitman is adapted to be connected with the piston at a point remote from the latter, a pitman pivotally connected with each pitman support, a main shaft located out of alignment laterally with a line extending between the points of connection of the pitmen with their respective pitman supports and at a point intermediate the distance separating said points, and crank connections between said main shaft and pitmen, the axis of said main shaft being located at one side of said line extending between the points of connection of the pitmen with their respective supports a distance less than the length of the crank arm.

714,353. Combination Hot Air and Gas Engine. Charles A. Anderson, Erick A. Erickson and John Wickstrom, Chicago, Ill, assignors to Chicago Motocycle Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 18, 1901. Serial No. 86,433 (No model.)

Claim.—1. In an engine, the combination of a power cylinder having a heater at one end thereof, and having a port for the intake of air and a separate port for the intake of a combustible fluid, power and transfer pistons in said cylinder, and means to cause said pistons to alternately approach and recede from each other, substantially as and for the purposes set forth.

714,445. Air Condenser for Steam Propelled Cars or Vehicles. Edward R. Bridson and Harry Brough, Nottingham, England. Filed Apr. 17, 1902. Serial No. 103,434. (No model.)

Claim.—1. The combination with a steam propelled vehicle having a steam generator and a steam engine, of a plurality of nearly horizontal tubes a open to the atmosphere at one end and arranged parallel to the line of motion of the vehicle, a box such as g into which the other end of each tube a enters, means for conveying the air and uncondensed steam from the box g, a chamber m placed at right angles to the tubes a, small tubes b connected to the said chamber m and having their open ends inserted in the ends of the tubes a, means for conveying the steam from the engine to the chamber m and means for drawing off the water from the box g, substantially as described.

714,492. Explosive Engine. Francois Lagoutte, Asnieres, France. Filed June 26, 1900. Serial No. 21,680. (No model.)

Claim.—1. In an internal combustion motor, the combination of a conduit for exhaust gases leading from the motor cylinder, said conduit having an air inlet near the point of connection to the motor cylinder, valve means controlling the said inlet, valve means controlling the flow of gases through the conduit and located farther from the motor cylinder than the said air inlet, and connecting mechanism which causes one valve to open when the other is closed, and vice versa.

714,501. Steering Device for Automobiles or Other Vehicles. Winthrop L. Mead, South Orange, N. J. Filed Jan. 24, 1902. Serial No. 91,041. (No model.)

Claim.—1. The combination with the frame of a vehicle providing pivoted axles and a bearing plate therebetween having a hole or passage for the steering rod and a fulcrum for an eccentric strap, of said steering rod and means for turning the same, an eccentric seated on said bearing plate and adapted to be turned by said steering rod and a leverlike eccentric strap also seated on said bearing plate and slotted at its fulcrum and having an arm or extension b, and rods connecting with said extension and with said axles, substantially as set forth.

714,574. Vehicle Spring. Edward F. Gehman, Reading, Pa. Filed Nov. 4, 1899. Serial No. 735,783. (No model.)

Claim.—The combination with a vehicle having upwardly curved side bars with depending bolsters at each end thereof, and hangers secured diametrically opposite each other in rear of the bolsters, the upwardly curving continuous leaf springs extending longitudinally with the side bars and having their opposite terminal ends secured to the hangers, and said continuous leaf springs being bent inwardly at their central portions, of the body having intermediate bolsters at its central portion, and securing bolts passing through said body, its bolsters, and the inwardly bent portions of the leaf springs thereby securing said parts together, whereby to elevate the body above the side bars so as to permit of a vertical movement of said body between the side bars, substantially as described.

714,597. Carburetter for Explosive Motors. Emile L. P. Mors, Paris, France, assignor to Societe Anonyme d'Electricite et d'Automobiles Mors, France. Filed Jan. 28, 1902. Serial No. 91,613. (No model.)

Claim.—1. A carburetter having a mixing chamber, an injector nozzle opening freely into the chamber, air supply openings above the nozzle and means to simultaneously cut off the air openings and nozzle from the supply pipe to the motor, substantially as described.

714,614. Speed Regulating Mechanism for Motor-Vehicles. Salvatore Scoguamillo and Charles H. Posner, New York, N. Y. Filed June 26, 1902. Serial No. 113,354. (No model.)

Claim.—1. In a speed regulating mechanism, a power transmitting shaft formed of a fixed and a longitudinally movable section, a plurality of pinions, means for supporting the pinions, means carried by the longitudinally movable section of the power transmitting shaft and adapted to engage with the pinions for suitably connecting them thereto, causing the rotation thereof, and means operated by the pinions for imparting movement to a vehicle.

The Week's Exports.

British Possessions in Africa—10 cases motor vehicles and material, $2,491.

Glasgow—3 cases motor vehicles, $600.

Lisbon—1 case auto vehicles, $1,100.

London—8 cases motor vehicles and material, $11,415.

Southampton—1 case motor vehicles, $1,200.

St. Helens—7 cases motor vehicles and parts, $700.

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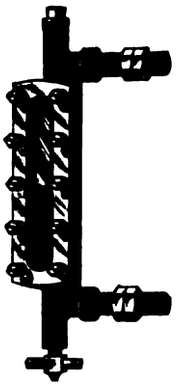


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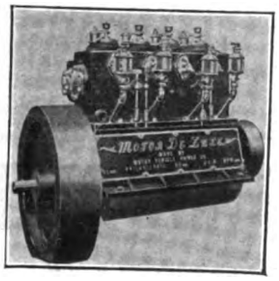
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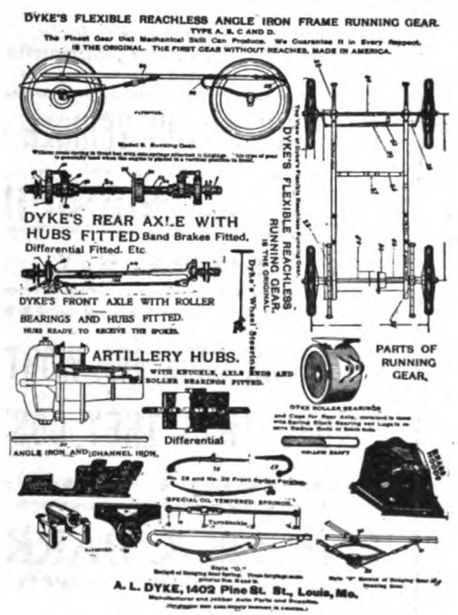
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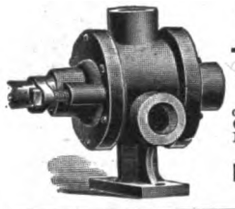
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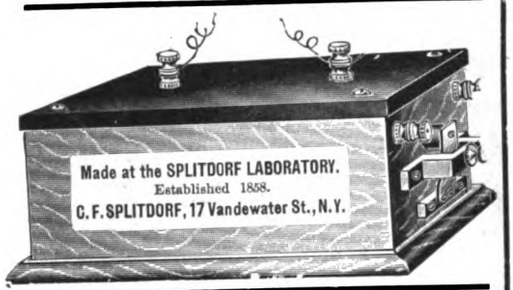
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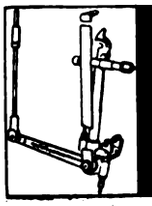
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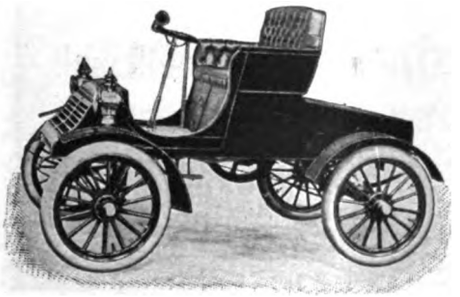
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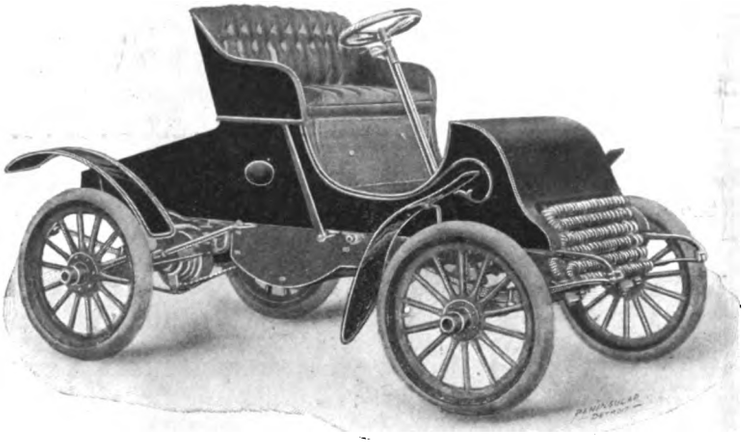
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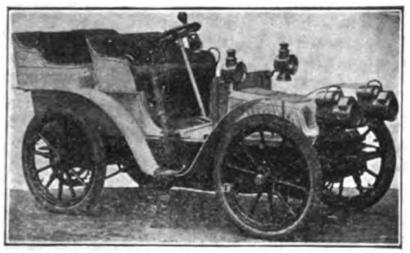
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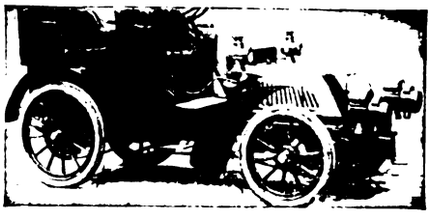
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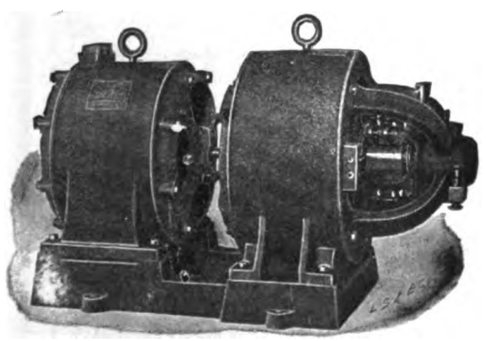
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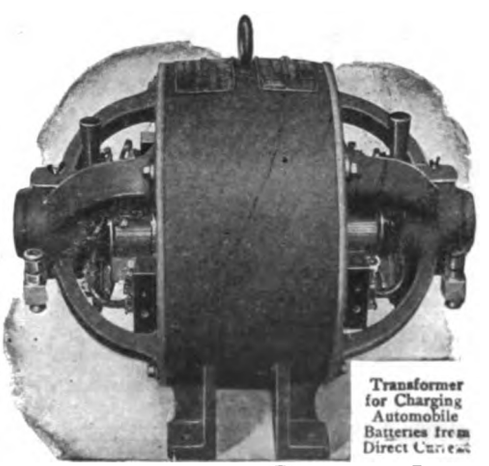
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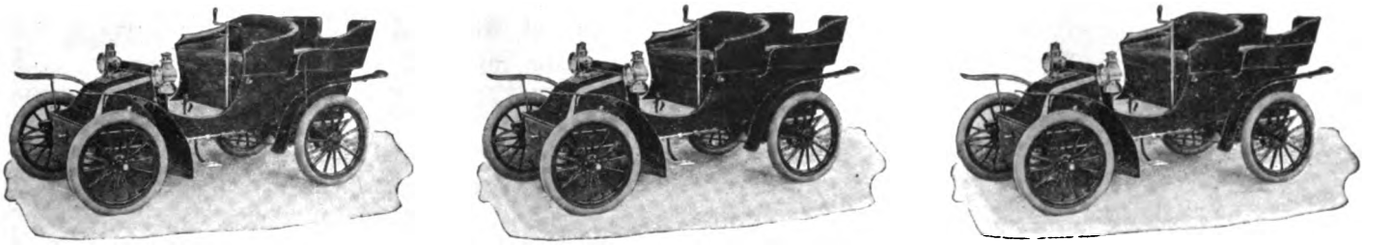
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proved that skillful and ingenious design, combined with the best of materials and workmanship, make the Rambler the equal of the $2,500 kind, though but one-third the price. Out of 193 starters, 34 only qualified for the honors, the Rambler earning a FIRST-CLASS CERTIFICATE for a perfect run of 100 miles without a stop. Held in a driving rain, the performance was remarkable, proving our claim that the Rambler is 100% good. Can we send you the catalogue describing it?

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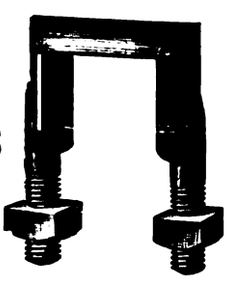
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A Close Inspection

of the

NEW STEARNS

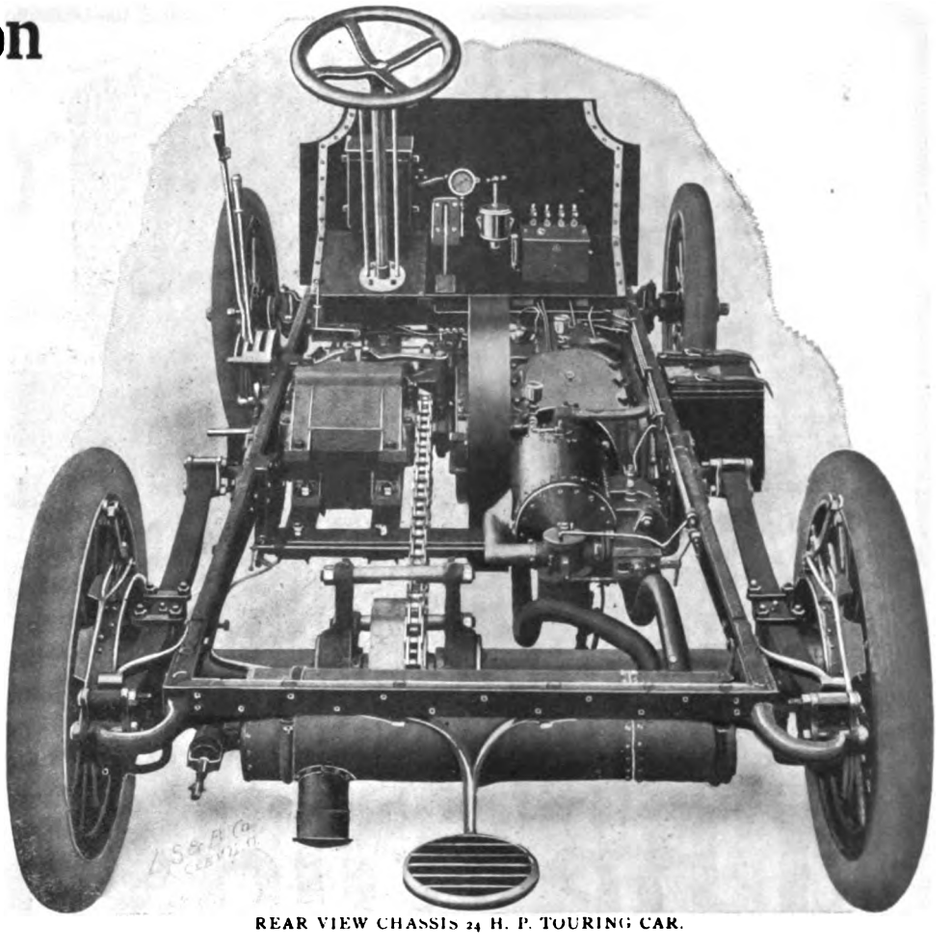
shows at a glance the many (new) valuable features. But it will take your closest investigation to appreciate them all.

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The best known automobile in America—the cheapest reliable machine in the world.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, December 11, 1902. No. 11

GRAHAM-FOX READY

Company to Make Engine and Complete Cars Formed—The Details.

It is not surprising that the production of a successful compound gasoline motor, as described in detail in last week's "Motor World," should set the trade to wondering and discussing. The trick has been tried too often, always with the same result, not to have such a different ending as this viewed with astonishment.

With such a motor as the Graham-Fox perfected and in successful operation, and a car equipped with it equally a "go," it is an easy and natural transition to the formation of plans for its manufacture and marketing. These have already been fully matured, and it is probable that within ninety days the new product, consisting of both motors and complete cars, will be on the market.

The Graham-Fox Motor Company is the name of the concern that will undertake the task. It was incorporated a year ago, and within a few weeks what amounts to a practical reorganization has taken place, new capital and capitalists brought in, and plans set on foot that will result shortly in the beginning of an active campaign. Such was the plan outlined to a "Motor World" representative by E. C. Snow, Jr., president of the company on Monday.

With Mr. Snow, who will assume the active management of the company, is associated—in addition to Messrs. Graham and Fox, the inventors and practical men in the concern—Irving Brokaw, son of Isaac Brokaw,, the well-known capitalist and clothing merchant of this city.

For more than a year Irving Brokaw has been the patron saint of the enterprise, the man to whom even more than its inventors, as the latter cheerfully admit, is due the final perfection of the motor. He has worked unremittingly and unstintingly for its success, and has devoted both time and money to the task.

The plans of the company were brought out in considerable detail in the talk with Mr. Snow, who is in the insurance business, wealthy and an ardent automobilist.

"The plans are practically completed," he said. "Our capital of $500,000 is divided into $250,000 preferred and $250,000 common. Nearly all of the former has been taken. Contracts have been signed, by virtue of which we start with more than $100,000 in cash, and there is little doubt that this will be materially increased by the closing of negotiations now pending. We are, therefore, in good shape financially.

"We shall make both motors and motor cars, motors for launches separately, the others only with the complete car. The latter will bear a strong resemblance to the Mercedes-Simplex, and will, of course, be equipped with our Graham-Fox compound gasolene motor. Two types of cars will be made, one of 20-horse power, the other of 45.

"As to the price, while I do not wish to make any promise that we may not be able to fulfill, yet I feel safe in saying that these cars will be offered at figures that will create a sensation. How far this is true you may imagine when I say that $1,500 for the 20-horse car and $3,500 for the 45-horse are the figures we have in mind.

Cadillac Adopts a "No-accessory Policy."

The new Cadillac Automobile Company, of Detroit, as a part of their policy have decided on a radical departure. Their cars will not be equipped with lamps, bells, horns or odometers; these will be listed as "extras" and be charged for accordingly. On the other hand, however, all Cadillacs will be provided with mud guards as part of the regular equipment. The Cadillac people with much justice contend that lamps, horns and the like do not properly come within the scope of car manufacture, but are rather items for individual choice and which afford agents opportunity for sales and profits which properly belong to them.

Smith Leaves G & J Company.

After ten years' service with the Indianapolis Rubber Company, of which the G. & J. Tire Company was an offspring, Harold O. Smith has resigned the management of both. He has irons in other fires, but is not yet ready to speak of them.

AMERICA'S FORFEIT POSTED

Winton Deposits Cash and the Automobile Club Challenges for the Bennett Cup.

Talk of America being represented in the race for the Bennett International Cup next year has at last reached the stage of action. The Automobile Club of America has declared itself a competitor. The action of the club followed closely upon that of Alex. Winton, of Cleveland, who on Monday depasited through Percy Owens, of New York, $600 with the club as an earnest of his willingness to be a contestant. This insured the American organization against loss, and it was "up to the club" to do something.

On Tuesday the Race Committee of the A. C. A. met and decided to nominate three entries for the race. Who the other two beside Winton will be is not known yet, but Dame Rumor in her most impressive tones says that H. S. Harkness is willing and that a special Peerless car is being built for him. Others who are mentioned as probable competitors because of their having made inquiries at the club about the race, are Windsor T. White, who is known to have a special steam car in the course of construction, L. P. Mooers, of Cleveland, and W. K. Vanderbilt, Jr.

It is not to be doubted but what the definite and positive attitude of Mr. Winton urged the Automobile Club into action and the registered letter containing the formal challenge with $600 forfeit was mailed on Wednesday to the Automobile Club of Great Britain and Ireland, which is the present custodian of the cup, S. F. Edge, of London, having won it last year from the French club.

Those present at the meeting when it was decided to enter three contestants in the name of the club were Georfge Isham Scott, chairman; Dave H. Morris, Harlan W. Whipple and A. R. Shattuck.

The rules of the contest require that clubs recognized internationally may enter not more than three machines each, and that the challenge must be in hand by January 1, accompanied by a deposit of $600, which is forfeited if at least one car does not appear to start.

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DO MOTOR WAGONS PAY?

Some Evidence Presented by a Concern That has Half a Million Dollars Worth of Advance Orders Booked

While most manufacturers are still holding aloof from what they concede will be the mainstay of the automobile industry in the future, the draught vehicle, there is a lesson of much interest in what is being accomplished by the one concern which has been strenuous in this line of production. According to their own statements, the Vehicle Equipment Company, of New York, has turned out a few more than two hundred vehicles this year, counting both light and heavy machines. Their plant has been extended three times during the current year. The concern now has half a million dollars worth of business under contract, and the salesmen have instructions to book no orders for delivery inside of five months. Early next year they are to have a new factory adjacent to the present one, which will have, it is said, a bona fide capacity of 600 machines the first year.

Concerning the present reliability and efficiency of the electric trucks and wagons of the company, which has been questioned at times, because of some firms having been reported as first adopting and then abandoning them, the Rainier Company, selling agents, is in possession of some remarkable documentary testimony going to show that by forging ahead where others have hesitated this concern has gone a long way toward bringing the commercial traffic automobile to the stage of practicability that it must attain.

Some of the evidences of this are of such nature and so unquestionably authentic that their value as information to the general world of automobiling transcends competitive bias and other commercial considerations. The Central Brewing Company, after trying one truck experimentally for several months, ordered four new ones of five tons capacity each. Concerning the work done by the experimental truck, as compared with the results obtained with horses, the company makes the following statement:

Truck left Ninety-second street and Third avenue with fifty half-barrels (five tons) at 8:30 a. m.; arrived at One hundred and sixty-sixth street and St. Nicholas avenue at 9:33 a. m.; left One hundred and sixty-sixth street and St. Nicholas avenue with forty-four empties (sixty pounds) at 10:02 a. m.; arrived at brewery at 10:50 a. m. Distance, eight miles. Time, two hours and twenty minutes. Horses take five hours and they make only one trip daily. The motor truck makes the trip three times a day.

Other facts gleaned regarding the increasing use of draft automobiles are: The Ehret Brewing Company, which is now running two motor trucks, has ordered six new ones. The Valentine-Loewcer Brewing Company has ordered five new trucks. Saks & Co., drygoods, have ten motor delivery wagons and not a single horse-drawn vehicle of the sort. Lang & Co., flour merchants, are using a truck that carries fifty barrels of flour to a load, and delivers 1,200 barrels a week, which formerly two team could not quite accomplish.

Most of these practical merchants agree that after the original investment, the cost of maintenance of such motor trucks as they are now using is less than what would be the cost of horses to do the same work.

Some of the departures now being made in the way of special hauling constructions f r particular lines of business are of more than trade interest and might make material for saffron hued newspapers. Many New Yorkers are familiar with the sight of a huge trunk which moves along Broadway and down to the Liberty street ferry, without horses and on wheels that are three-fourths concealed under the body of the



trunk. It is the electric truck of Marlow, Sullivan & Co., of New York, and runs on delivery service between that city and Newark, where the factory of the firm is located. Something even more striking is now being built for the New York Railway and Steamship Timetable Distributing Company. It is a facsimile of a Pullman car, with vestibuled platforms, windows and everything complete, and to further carry out the illusion the wheels run underneath the car, as they do in the genuine article. It is seventeen feet long, with a hauling capacity of two tons, and is designed to take the place of four horse-drawn trucks.

A five-ton dumping truck that acts similarly to the brick dumping carts, is another new sort of commercial car. This is being built for the Eaton, Cole & Burnham Co., and is designed to haul castings.

Another novelty is a five ton truck with tracks on the bed of it, especially built for a new corporation which has itself the novel scheme of shipping and storing furniture and other goods in a portable safe deposit vault as big as a moving van.

Automobile ambulances there have been in plenty, but a patron of the Mount Sinai Hospital has donated to it a sick wagon that is bigger, faster and more elaborate in its equipment and finish than any other yet seen. It will be lined with white enamelled germ-proof veneering, have glass sides, with wire screens on the inside to protect the patient from broken glass in case of mishap. The stretcher bed pulls out on tracks, and everything about the vehicle is of the most luxurious sort.

Still another new proposition is a truck that is building for the New York Telephone Co., with a windlass on it especially designed for hauling heavy cables through the subway conduits. This windlass is supposed to be able to do the work of eight men.

For the first tim since the Vehicle Equipment Co. began business, it is now preparing a catalogue for 1903. In this the constructional features of the chassis used on all the company's product, which have been chiefly responsible for the success of its vehicles, are referred to substantially as follows:

"Most builders have adhered strictly to the lines of the horse-drawn vehicles, with high wheels and springs and bodies mounted on the old style 'reach' running gear and built with a single motor, thus necessitating a split rear axle, a differential gear and other complicated mechanism. In consequence of such construction the wear and tear has been enormous, and the vehicles an expensive experiment to the owner.

"These objectionable features have been entirely done away with by means of our patent 'pedestal' running gear, which is similar to the pedestals and axle boxes on a railway truck, and does not require a supporting 'reach' from the front to the rear axle. The pedestal is a single steel casting, fastened to the I beam of the body frame, and it has diagonal brace bars for additional support. This construction insures a great saving in the wear and tear on the springs and axles, and affords the rigid strength necessary for a durable self-propelled vehicle. The I beam body relieves the vehicle of any tendency to buckle, and offers supp rt for the suspension of the battery below the frame, thus leaving the inside of the body free and clear of its obstruction."

The accompanying cut shows one of the newest trucks of the Vehicle Equipment Company, the one built for the Portable Security Vault Company.

Exports are Still Increasing.

Export statistics for October, which have just been issued, disclose shipments of motor vehicles during the month to the value of $122,624, as against $55,735 during October of last year. For the ten months ending with October the exports attained a value of $970,610. For the same period of 1901 they were valued at but $262,537.

Recent Incorporations.

Denver, Col.—Colorado Automobile Co., with $50,000 capital. Directors, George W. Wood, M. W. Gano, Frank R. Ashley, Alvin B. Daniels, Lewis Lindahl.

Jersey City, N. J.—Dawson Friction Gear Co., with $125,000 capital. Incorporators, John W. Avery, New oYrk, and E. P. Dawson and Howard W. Pierce, Butte, Mont.

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RECORDS NOT REGULAR

Oldfield Detroit Times Denied Recognition by A. A. A.—Authenticity is Admitted.

Official recognition of the figures made by "Barney" Oldfield at Detroit on December 1, when in the Henry Ford racing car, world's track records against time from one to five miles, inclusive, were set, has been denied by the American Automobile Association. The decision is based on the fact that the permission of the association to go for records had not been obtained. No doubt is entertained regarding the authenticity of the records; it is simply a lack of regularity that invalidates them in the eyes of the association.

The action was taken Tuesday afternoon, when the matter was brought officially before the Board of Governors of the A. A. A. at the club rooms of the Automobile Club of America, this city. W. E. Metzgar, of Detroit, presented affidavits, signed by four timers and three scorers, detailing the speed trials, and giving the times for each mile up to five miles of three separate attempts, as told in the "Motor World" last week. The best of these times were, for the mile, 1.01 1-5, and for five miles 5.20. Everything was in due form, attested by the County Clerk of Wayne County, Mich.

The stumbling block in the way of the acceptance of the records was a section of the much-criticised racing rules of the A. A. A. that has been generally overlooked. Attention had been called to it by a telegram from Cleveland immediately after the records had been made, asking if sanction had been granted by the association for the attempts.

The section is 67 (a), which reads: "No time shall be considered ocial unless the time is taken by an official of a "Recognized Meeting," or by one appointed subject to the approval of the Racing Committee."

It was pointed out that the last clause is liable to two interpretations. It is at least an open question whether the "one appointed" cannot be appointed by any reputable automobilist or association, and, if the appointment is subsequently approved by the Racing Committee, whether such action complies with the rule. Such a view was put forth at the meeting, but a majority of the Governors, those present being President Scarritt and Messrs. Webb, Pardington and Shattuck.

After considerable discussion it was voted that the records should not be recognized, owing to application not having been made to the A. A. A. before the trials.

In a conversation with the "Motor World" had with Chairman W. J. Stewart, of the Racing Committee of the A. A. A., it was stated that prior to the making of the Oldfield records no application for a sanction or permission had ever been made to the A. A. A., and that none had up to that time been issued. It was also brought out that none of the existing records have ever been officially approved by the A. A. A., nor, as far as known, by its predecessor, the Automobile Club of America, which was the governing body before the A. A. A. took charge.

"Hereafter the making and recognizing of records will be done in regular form," said Mr. Stewart. "We have no doubt whatever that the Oldfield records were made, but owing to the informality it is out of the question to stamp them officially.

"No great harm will be done, however, for we have appointed W. E. Metzgar an official of this association with full power to take charge of future trials in eDtroit, and anything he endorses will be accepted by us."

To the "Motor World" man Mr. Metzgar confirmed this, and added that Oldfield would go for the records once more and had the most perfect confidence in his ability to repeat his performances.

"He says he can cover a mile in a minute without any great trouble, and I guess he knows what he is talking about," concluded Metzgar.

Prosperity Attends Akron Rubber Plant.

An air of prosperity sits upon Akron, O., these days. Additions and extension of existing rubber plants are being made in a number of cases. The B. F. Goodrich Company is now putting the finishing touches on its big addition, and has the site purchased for an experimental plant. The Goodyear Tire and Rubber Company also has a large addition under way, and the Firestone Tire & Rubber Company has also taken steps toward building an addition to its plant in South Akron.

Automobiles at English Cycle Shows.

At the two cycle shows held in London from the 21st to the 29th ults., respectively, quite a number of automobiles were exhibited. At the National show they were confined to British cars almost entirely, but at the more popular Stanley there was a good sprinkling of American and other foreign-built vehicles. Among the former were the Prescott, the Orient, the Oldsmobile, the Rambler and the Cleveland cars.

Will Sell Stearns and Knoxmobiles.

An arrangement has been made for the handling of the Stearns cars, made by the F. B. Stearns Co., by the Automobile Headquarters, No. 65 Stanhope street, Boston. In addition to the Stearns as a leader, the Pierce line has been added, while Knoxmobiles will be sold, as heretofore.

Rainier Secures Berg Agency.

Arrangements have been concluded whereby the Rainier Co., of 393 Broadway, New York, will be the selling agents in that city for the Berg Automobile Company.

LUGS ARE STANDARDIZED

Action Taken by N. A. A. M. Regarding Rims —Chauffeur Problem Also Tackled.

As a result of the investigation that the National Association of Automobile Manufacturers has had on foot for several months, during which time correspondence was entered into with the various tire makers, a standard method of spacing lugs and of determining the number of them to be used in rims for single tube tires has been adopted.

The action was taken at a meeting of the Executive Committee, held on Wednesday of last wewek. The matter came up on the following resolution being offered:

"RESOLVED, That this association adopts as its standard the followiwng number of lugs and spacing for same on single tube tires:—

For rims 26 and 28 inches in diameter, 5 lugs, placed 25 degrees, 98 degrees and 180 degrees on each side of the valve.

For rims 30, 32, 34, 36 and 38 inches in diameter, 8 lugs, placed 25 degrees on each side of the valve, then 40 degrees and 50 degrees, alternately."

The resolution was adopted.

Followiwng the adoption of the resolution, the question of the standardization of lamp brackets was brought up. After some discussion the secretary was instructed to inquire fully into the matter.

The followiwng resolution was also adopted:

"RESOLVED, That the president appoint a committee of three to report on a plan for the examination of chauffeurs, and the issuing of certificates to them by the N. A. A. M."

These members were elected:

Actice: Apperson Bros. Automobile Co., Kokomo, Ind.; Cadillac Automobile Co., Detroit, Mich.

Associate: The Dow Portable Electric Co., Goston, Mass.; Ralph Temple & Austrian Co., Chicago, Ill.; J. M. Quinby & Co., Newark, N. J.; The Electric Storage Battery Co., Philadelphia, Pa.

Oldfield Fails at Straightway Trials.

One second outside of Fournier's time, made on the Coney Island Boulevard, Brooklyn, in 1901, was the performance done by "Barney" Oldfield at Detroit, Mich., last Saturday, when he tried for the world's straightaway one-mile road record. His time was .52 4-5, as against Augieres' 46 seconds at Dourdan. The road over which Oldfield drove was frozen and rutty, and that he should have gone so fast was remarkable.

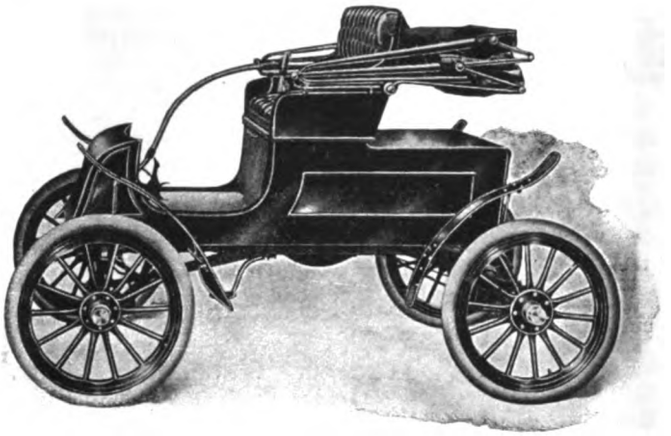
John Wanamaker, New York City, has acquired the agency in the metropolitan district for the Rambler gasolene runabout made by T. B. Jeffery & Co., Kenosha, Wis.

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The Popular Runabout for Everyone

DESERVEDLY SO

Combines Everything That a Desirable Automobile Ought to Have



You Ought to Know More About It

CATALOGUE FOR THE ASKING

NORTHERN MANUFACTURING CO., Detroit, Mich.

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P. DESMARAIS & CO., Bristol, Conn. BANKER BROTHERS COMPANY, Philadelphia, Pa. R. V. CONNERAT, Savannah, Ga.
OHIO MOTOR CAR CO., 317 Huron St., Cleveland, Ohio. NATIONAL AUTOMOBILE & MANUFACTURERS CO., 26 Fremont St., San Francisco, Cal.

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DEVOTED TO THE AUTOMOBILE And Kindred Interests

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NEW YORK, DECEMBER 11, 1902.

All Eyes Turned Toward Paris.

Yesterday the doors of the Grand Palais des Champs Elysees, Paris, were opened to the public, the occasion being the inaugural of the Salon de l'Automobile, du cycle et des Sports, as the automobile show under the auspices of the Automobile Club of France is officially termed.

It is expected that the present show will be no less interesting than its predecessors. While no revolutionizing exhibits are looked for, there is no reason to doubt that substantial advances in constructional details have been made and will be shown on a number of the stands. Although in the past marked improvements have seemed to foreshadow the approach of finality the industry is really so young that by the time another year rolls around it is seen that designers have been able to reach higher flights and attain a point of yet greater excellence. Consequently the search for novelties, made by so many automobilists, is always rewarded and the newest models are found to be well worthy of a close and critical examination.

It seems probable that this year more attention has been given to the improvement of the transmission than to any other single feature.

There is nothing surprising in this. Even the best forms of transmission used on the well-known foreign cars are admittedly wasteful to an enormous extent. Yet they have so many good points that little serious thought is given to the matter of displacing them. Betterment, not substitution, is felt to be the only course open.

Other features that have been given attention are the better silencing of engines, the obtaining of greater simplicity ,and, last but not least, a pretty general increase in the matter of power. The latter is confined almost entirely to cars already high-powered, and it seems as if the calling of a halt in this direction was almost as far off as ever.

French cars will continue to dominate the show. The absence of the great German firm of Daimler is partially compensated for from an international point of view, by the advent of two prominent English concerns, the presence of one of which, the Napier, the winner of the Bennett Cup race, can scarcely do other than excite unpleasant emotions in French breasts. It is cause for regret that American cars have not as yet taken their place among those shown. Perhaps the day is not far distant when this state of affairs will be changed, but until that time we must possess our souls in what patience we are able to summon to our aid.

As it is, there is not now, nor ever has been any question that the French function is the premier show. In magnificence, in comprehensiveness, in the possession of the largest showing of the best exponents of the art of building motor cars, it must be adjudged the palm. The early start and phenomenal growth that has attended the French industry cannot be duplicated in any other country, and it has much to do with the result.

The Remnant Blunders Again.

With the elaborate fatuity that has characterized all its efforts for a year past, the New York State Remnant of the League of American Wheelmen has blundered again in trying to help the situation with regard to street sprinkling. First the desire to arrogate all credit to itself, and secondly through crass stupidity and the habit of not looking over the top of the little fence that encloses its own mind, the Executive Committee of the Rtmnant consulted with itself and called a meeting to take action on last Saturday night. The time fixed was inopportune, the more so because of bicycle races at Madison Square Garden, but it suited the men who called the meeting. The place of assembly was hardly one to be chosen for automobilists and drivers. The various other organizations interested in the sprinkling were not taken into counsel and asked what would be convenient. The "mighty" cycling officials were going it on their own hook; and the other organizations were simply notified to be present. The result was that they were not present, and so far as being representative was concerned the meeting was a fizzle.

The matter to be dealt with was too important to permit any working to cross-purposes, and after the call for the meeting had been sent out it was not the thing for bodies of real sense and influence to interfere, although the call was recognized as a piece of puerile insolence. The only thing to be done was to try to get a representative assemblage to the place, but it was no use. Several persons representing the cycling realm, including the Associated Cycling Clubs, were gathered in at the eleventh hour, and the resolutions drawn by the legal genius of the L. A. W., who writes licensing ordinances and personal whines, were adopted.

Reasons given for the absence of the Automobile Club and N. A. A. M. representatives, given by those clerically official in each body, are interesting. According to these men it was thought unwise for the automobilists to manifest too much interest in the sprinkling ordinances, because the Aldermen think there are barrels of money behind the automobilists, and, well ——.

The Making of Salesmen.

That salesmen are born, not made, may be putting the case a little too strongly, but it will scarcely be denied that natural aptitude plays an important part in the makeup of the successful salesman.

In the automobile business special knowledge does this to a much greater extent than it does in most other lines. The salesman is also a demonstrator, and in a majority of cases he must make the final assault from the seat of the car he desires to sell; being fortunate, indeed, if it is not also necessary to make the preliminary advances from this same vantage point. In other

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words, he cannot expect to make sales from the floor of the salesroom. Talk alone will not accomplish his object; it must be supplemented with action.

It follows as a matter of course, therefore, that the salesman must be a practical man, possessed of a fair knowledge of automobile construction in general and of the cars he sells in particular.

Nowhere is ready wit of more value than in demonstrating a car that has met with a mishap, trivial or otherwise. At such times the prospective purchaser becomes a judge, uncompromising and unyielding, one whose attitude toward the car depends to a considerable extent on the methods adopted by the salesman to cope with the difficulty. It is not enough to diagnose the ailment correctly and treat it successfully. It is equally important that this be done in such a confident and dexterous manner that faith in the car, to say nothing of its operator, will be raised to a higher pitch than ever.

On the other hand, it is not necessary that the salesman should also be a machinist or a mechanic, much less an M. E.

It is infinitely easier for a born salesman to acquire a smattering of mechanics than it is for a mechanic to learn the art of salesmanship.

The best mechanic that ever worked in a shop is likely to make a lamentable failure if he essays the role of salesman. A fish out of water is in no wores predicament than some mechanic-salesmen would be if sent on a demonstrating expedition. So general is this rule that very few delusions are entertained on the score.

There is a demand for good automobile salesmen, and it will increase steadily. To meet it as it should be met, something more than a good personality, a plausible tongue and even the ability to bring a customer to the purchasing point are needed. Men who really wish to fit themselves for the part will make a study of the automobile and acquire sufficient knowledge of it to always be a little in advance of the average user.

Why not the Lap Robe?

With horse drawn vehicles a lap robe is as much a part of the equipment as a whip, and almost as much as the reins. Not even in the warmest weather is it left behind. When winter approaches robes of all sorts, sizes and conditions are found in the carriage. All this in spite of the fact that every carriage has a dashboard, designed especially to protect the occupants.

To the automobilist, however, a covering of any kind is something for which he has small use. He seems to take a pleasure in scorning them, although he drives further and faster than the man who sits behind a trotter, and he has no protection to speak of.

Why the presence or absence of a horse should make such a difference is one of those things difficult to explain. The autoist has a strong liking for the open air, and, apparently, for the breezes that do blow there. But at fifteen or twenty miles an hour, to say nothing of much higher speeds, it would naturally be supposed that he would get all of it he could possibly desire, even if a robe was drawn over his knees. But he likes his robeless condition, else why does he continue to go robeless?

In the winter, it is true, he makes some concession to tradition. He wraps himself up in robes just as other vehicle users do. But this is not always true even then, and any one can pick out cars in service without a robe of any kind about them, although the thermometer may be hovering around the freezing point.

This is but one of the peculiarities of the pastime, due, perhaps, to that inborn tendency to blaze new ways instead of sticking to the beaten path.

Carriages have, from time immemorial, been equipped with shafts, dashes, whips robes, etc. Ergo, the automobile should dispense with them, or as many of them as the circumstances warrant. Just as tops, storm curtains and protection of every kind were absent from the early motor vehicles, but have since been supplied in many cases, so the matter of robes and similar wraps is certain to receive attention in the course of time.

Warning is Always Given.

Every autoist knows that a car never goes wrong without warning of some sort. There may be doubt as to the exact nature of the trouble, doubt that is resolved only after making an examination. But there was something to herald its coming, something that made it plain that there was a storm brewing. If it is a weak spark, for example, it did not pass immediately from the point where it was delivering its normal power to another where it is insufficient to cause an explosion. An attentive driver would detect the deterioration that was taking place before the current gave out entirely. In fact, it is hardly possible for him to be utterly at a loss. He may mistake the cause of the trouble, but at least he has ideas on the subject, and it is no very difficult matter to see if they are correct.

The most obvious explanation of the cause of something that bothers an autoist is frequently the correct one. Yet it will be passed by and the search directed into other channels, the motor or other parts being gone over carefully and with much expenditure of time, all without result. How often is it the case that both the carburetter and the ignition system are overhauled in vain, only to find that the gasolene is shut off? Or even that the electric current has not been switched on.

"Seventeen cars which took part in the Boston reliability run have been awarded gold medals. The records, the runs and the awards are generally admitted to be 'fakes,'" says the alleged American correspondent of Motoring Illustrated. It would be interesting to know just what sort of company "Autogo," as he signs himself, frequents, who the men who "generally admit" the existence of the "fakes" are. The vileness of the calumny is exceeded only by its transparent absurdity.

Down Boston way automobilists who are arrested charged with violations of the speed law have the choice of two horns of a dilemma. If they plead guilty, and thus save the prosecutors all sorts of bother, they are let off with a $10 fine. If they deny the charge, however, and show fight, the verdict is against them, anyhow, and the fine is made $25. A more brazen method of intimidating accused persons it would not be easy to find.

Of all the faculties none are more highly trained or laid under contribution more frequently than the sense of hearing. It is by his ear that the autoist learns that there is something wrong, and frequently it tells him what the trouble is. A dirty spark plug, a worn or ill fitting clutch, a "knock" in the engine, an idle cylinder—these are discovered by the ear, and it is only after that that the eye and the hand play their part in putting matters to right.

From Paris comes the story that a woman automobilist arrested for exceeding the legal limit was sentenced to imprisonment. Confinement for twenty-four hours in Saint Lazaire Prison, among vile malefactors of every description, followed.

When the carriage is horseless there is all the more need of horse sense on the part of its driver.

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Comment Unnecessary.

NORTHERN MANUFACTURING CO.
AUTOMOBILES.

DETROIT Sept. 25th, 1902.

The Goodman Company,
154 Nassau St.,
New York, N. Y.

Gentlemen:--

In justice to your publication, "The Motor World", we wish to state that we are receiving very gratifying results from our half page advertisement. Inquiries are coming in daily from all points of the compass and with the product and prices we are now offering, we believe very satisfactory results will follow.

We think "The Motor World" is a winner.

Yours respectfully,

Northern Manufacturing Co.

Geo H. Barbour Jr.

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COMING OF THE CADILLAC

Detroit's Newest Gasolene Car Makes its bow—Many Excellent Features.

No company ever started business under better auspices than the Cadillac Automobile Company, of Detroit, Mich. Formed only a few months ago, with all the capital it can use and in other ways adequately equipped, it has already "made good" by bringing out the Cadillac runabout, a smartly designed, soundly constructed gasolene car. With such a car a more poorly fitted concern than the Detroit one should go far, and it is simple truth to say that it will



prove a factor in the trade that it would not be easy to overrate.

Of the best type of the so-called "American design," the Cadillas car is fitted with a single cylinder motor, developing 5 horsepower. It has no rubber, asbestos or other gaskets to burn, soak or blow out, thus avoiding all chance of having water in the cylinder.

Bronze bearings of generous size are used throughout. The bearings on crank chaft and crank pins can be removed without taking shaft from engine frame. They run along time without adjusting and, should they ever need renewing or adjusting, this can be easily done. The cylinder is detachable from frame and all parts of motor are interchangeable.

The feeder used in the Cadillac is one of the most distinctive features. The feed is positively and permanently adjusted before leaving the factory and automatically supplies a proper mixture for any speed from five to thirty miles an hour without change of gears. It is unnecessary to change this adjustment either in summer or winter, or in wet or dry weather.

The igniter plug is of a special design, thoroughly accessible, easily removed, positive and reliable, and is so placed as to avoid deposits of carbon which so often prevent perfect ignition.

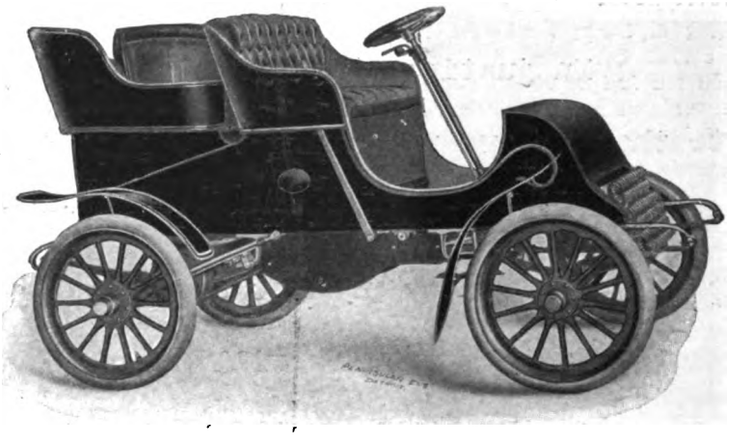
The gears are of the planetary type, of novel design, fully protected by patents, and though only steel and bronze gears are used, their action is almost noiseless. The gears run in oil and one oil hole lubricates all the bearings.

The radiator is made of five-eighth seamless tubing, with copper discs covering them, placed three-eighths of an inch apart, thus giving a very large area for cooling purposes. The tubing forms an endless coil of twelve tubes, and, having no side plates, the liability of leakage is entirely done away with. The circulation of water, at all speeds, is so perfect that the consumption of water is reduced to a minimum.

The equalizing gears have large braking surfaces keyed directly to each wheel shaft, which act the same as drums on rear wheels, yet do away with the unsightly, heavy and complicated arrangements which go with wheel brake drums. This arrangement also avoids the insufficient brake area and excessive strain on the gears of compensating mechanism usually found in light automobiles.

The Cadillac is provided with a sensitive and powerful wheel steering gear in which the quickness of the lever and the strength and ease of the wheel are combined. It has an effective and positive adjustment which prevents the usual excessive and dangerous back lash.

The Cadillac was at first designed as a one-seated vehicle only, but having found that it could easily carry four passengers on country roads, it was decided to make a Tonneau also which could be placed on the vehicle withut changing any of its parts. The advantage of possessing a moderate priced automobile capable of carrying four people, if desired, will appeal to those who do not care to purchase a touring car for every day use.



Gasmobile's Worthy Successor.

In the space at the Madison Square Garden show secured by the Automobile Co. of America, and which will be occupied by the successor of that concern when the expected reorganization takes place, will be shown one of the most superb specimens of a French type car that has even been turned out of a factory. It is designed after the Rochet-Schneider cars, and a careful examination of it warrants the assertion that in its design and construction a standard has been set that it will be very difficult to equal.

Mobile Headquarters now in New York.

Henceforth the headquarters of the Mobile Company of America will be in this city, instead of at the factory in Tarrytown.

They have leased the entire building at the corner of Fifty-fourth street and Broadway, and General Manager Gallaher and the executive staff are now removing to that address. The building is a big, spacious structure, which will afford not only ample offices, but space for show rooms, storage and repairs.

Will not Come to New York.

Post & Lester, whose contemplated removal from Hartford to New York was noted last week, write that they have reconsidered their intention and will remain in the Connecticut capital; in fact, they say that even if the projected New York establishment had been opened, the one in Hartford also would have been continued.

Cadillac Opens in Chicago.

For the purpose of developing a business in Cadillac automobiles, made by the well known Detroit concern of that name, the Cadillac Co. of Illinois has been formed at Chicago. A store will be opened on Michigan avenue, between Thirteenth and Fourteenth streets, for the sale of these cars, and will be in charge of R. Harry Croninger as manager.

The C. G. Fisher Automobile Co., Indianapolis, Ind., has bought for $10,000 the property at No. 330 North Illinois street, now occupied by a dwelling, and will erect an automobile store

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Licensing a Failure Abroad.

"The system of numbering automobiles has been proved a failure wherever it has been adopted on the Continent," says an autoist resident in Paris. "It has either resulted in indiscriminate fines without a fair hearing, as has been the case in some parts of Belgium; or in protracted legal proceedings ending in the discomfiture of the police, as in France. In the first place it does irreparable harm to the trade, and in the second, whilst putting individuals to great trouble and expense, it makes a mockery of the law and encourages evil-doers to defy it. What a strange thing it is that we always insist on learning our lessons by bitter experience of our own, instead of profiting by the experience of others. In the case in question it would be so easy to avoid taking the wrong course, and it seems to be flying in the face of Providence to neglect to take the advice of those who have tried it."

Paris has a Chauffeurs School.

A "Free School for Chauffeurs" has been established at Paris, and is said to be well attended. The following weekly programme is gone through with:

Monday—Electric energy and traction; Alcohol industry (first and third Mondays).

Tuesday—Gas and petroleum motors.

Wednesday—Geometry applied to mechanics; industrial drawing.

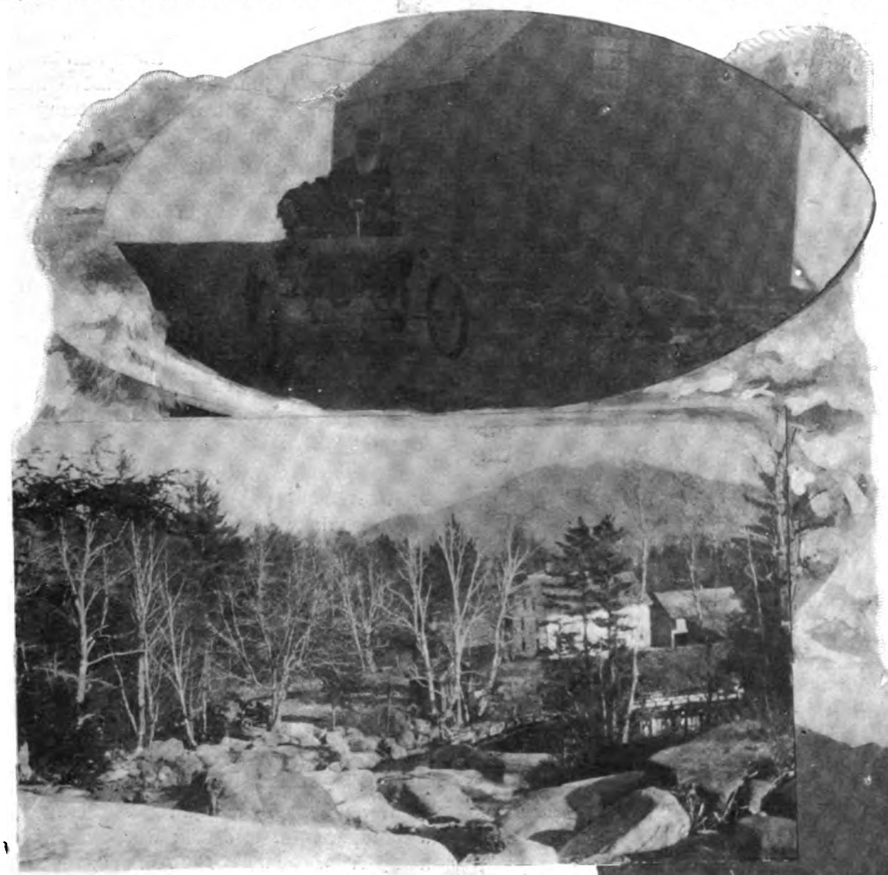
Thursday—General mechanics, commercial German.

Friday—Construction.

Saturday—Road geography, illustrated; Espéranto, universal language (second and fourth Saturdays).

Up Mount Washington in Winter.

Climbing Mount Washington at any time of the year is no small accomplishment. Climbing it in November after the snow has commenced to fly and the wind to roar is in the nature of a feat. The accompanying pictures attest that the feat was performed by Benjamin Smith, manager of H. B. Shattuck & Sons' Boston establishment, and that an Oldsmobile was the vehicle that enabled him to do it. As summer travel had ceased, the bridges had all been removed and weighted down, and in order to make the eight-mile ascent, Smith had to employ men to go ahead of him and relay the planking. This done, the Oldsmobile proved itself equal to the task and enabled Smith to pierce the heavy cloud banks shown in the lower picture and to ride above them. The descent wore both brakes to a frazzle.





Race Meets on the Coast.

The San Francisco Automobile Club has decided to have a two days' race meet at the Golden Gate, and another one of two days at Los Angeles a week after the automobile show in Chicago has been ended.

Touring in Spain and Africa.

Before the Automobile Club of America on Tuesday, J. Dunbar Wright delivered an illustrated lecture on an automobile tour which he took last summer through Spain, Northern Africa and the Island of Madeira.

A feature of the entertainment was the hundred or more lantern slides of camera snap shots taken by the lecturer. Views of Gibraltar, Funchal, Tangier, Granada, Cadiz, Seville and a dozen other cities in the countries visited were shown. The photographs were remarkably distinct and artistically taken. The lecture was punctuated with witticisms which called forth frequent laughter, and there were hearty applause and a vote of thanks at the close.

Reduce Membership Fee.

A special meeting of the American Automobile Association was held on Tuesday at the rooms of the Automobile Club of America in New York and the constitution amended so as to place the membership of the organization on a more rational basis. It was voted unanimously to reduce the dues so that the clubs holding membership will next year be taxed only $1 for each of its members instead of $3, as at present is required. The Automobile Club of America was represented by A. R. Shattuck and W. E. Scarritt, president of the A. A. A. W. J. Stewart represented the Automobile Club of New Jersey and the Long Island Automobile Club was represented by A. R. Pardington and F. G. Webb. The Rhode Island and Chicago clubs voted by proxy.

Buyer Pays Auctioneers' Fee.

At the auction sales which take place at the French Tattersall's many bargains may be had. The charge to the sellers is $4 for each car, and 20 cents for insurance. The purchaser pays the auction fee of 10 per cent. the fee being added to the amount of his bid.

A new three story building is being erected by the Autocar Co., Ardmore, Pa., necessitated by the expansion of the company's business. A twenty-page booklet, containing instructions for beginners, has been compiled by the company, and a copy is given to each purchaser of a car.

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Commentaries

Percy Owen was wroth last week. To those familiar with the uniform serenity of the Winton's get-there New York manager this statement of mine may appear surprising; but it is so, nevertheless. Owen was madder than I had ever seen him before. His foresight and fairness are among the qualities that have brought him to the top of the heap, and when I first heard that he had "indorsed," or was frantically and officially favoring the automobile daily paper which the self-exported importation from Austria says he will publish during the show, I marvelled. The story of Owen's "indorsement" was common gossip, accredited in broken English to the ex-Austrian himself. When I mentioned the report to Owen he exploded. Some one before me had mentioned it, and what Owen said it would not be exactly fair to repeat. It was what might have been expected of him, however. He had neither indorsed nor favored it, believing, like most men, in a "fair field and no favor." Some of the gentlemen who temporarily laid this belief on the shelf and favored the Austro-American daily because of a desire to obtain certain names that are promised them, to override their better judgment, may have the fact brought home to them. I have reason to know that most of the New York dailies are not in the dark as to what is doing, and if they give the show the go-by after the first day or two, charge it up to the Austrian and the desire aforesaid. Editors of even metropolitan dailies are only human and know an interloper when they see one.

* * *

I confess that the methods of this little interloper at times befog me. His free use of Owen's name is but one sample. His venomous attacks on the bicycle people who are now in the automobile trade is another. How, after such gushes of slime, he is able to face such "bicycle graduates" as Alexander Winton, George H. Day, Windsor White, M. L. Goss, T. B. Jeffery, Jas. Becker, W. D. Gash, Geo. Banker, W. D. Mettzger and the others, to say nothing of the tire and lamp people, is beyond me. And yet he does it; which leads me to remark that the men who receive him are more charitable than I am.

* * *

The man who has a small mind seldom has occasion to change it when it comes to any question in relation to the particular vehicle or form of power therefor that he favors.

* * *

Remember me telling you about the $10,000 watch belonging to an ex-promoter I saw in a pawnshop? Remember, also, how I assured you that the owner of the watch would never again be able to fool any one, especially in the automobile industry, where the dear recollections of his promoting abilities had left an ineradicable mark? Well, I was wrong; he's just fooled them again, all right. With no other capital than his promoting nerve he induced a big Western concern which had grown wealthy building marine motors to enlarge their plant so as to turn out some five hundred vehicles, for which the ex-watch man gave them orders and plans. When the first vehicle was completed the promoter told the confiding builders that he wanted to take it to Cincinnati, where the people were holding mass meetings in their anxiety to buy that particular automobile. To Cincinnati went the vehicle, and with it the promoter. Both man and machine proceeded promptly to the finest hotel in the city, and both snorted around in a way calculated to attract public attention. With this accomplished, the promoter invited thirteen—certainly an unlucky number—of the city's leading merchants to a banquet. The thirteen came, the banquet went with them, and the giver, he went, too. Now an anxious Cincinnati hotel man wants to know who is to pay him $900 for the worthless checks the promoter gave him for the thirteen's dinner. Lincoln was wrong; you can fool all the people all the time—that is, you can if you have the ability for doing so that this ex $10,000 watch owner has time and time again shown he possesses.

* * *

When the concern who took this order from the individual who is now being sought for by the madder and wiser hotel man was first reported to be about to embark in the automobile business, I heard of it, and told an advertising friend of mine about it. You see, it was a big concern, and both myself and my friend felt sure that the first man on the spot would land the concern for a nice, big advertising contract. Well, my friend was the first man there all right. The frost was a foot thick. The gentleman who saw him told him very plainly that his concern never advertised in trade papers, nor did they care to begin. They had accepted an order from a very rich man for a mere sample lot of five hundred vehicles, which was to be followed by other orders from him which would so tax their plant that they had already given contracts for a large addition to their works. Advertise? Why should they? And in a trade paper, too! Ridiculous! The advertising man made his escape, and when later on he learned who the "very rich man" was, did he sit right down and send a telegraph to that concern putting them next? Did he?

* * *

In the building of a satisfactory road vehicle the trade has now advanced to where the generating of sufficient power with which to drive it has become entirely secondary to the securing of a satisfactory transmission. It is no problem at all any more to produce power enough to drive any vehicle, but to land that power where it is needed without too great a diminution thereof is a problem very far from being easy of solution.

* * *

Fourteen dead and twenty-one seriously injured is the official list of hunting casualties for the season in the woods of northern Wisconsin and Michigan alone. How much greater the grand total from all the States is no one may know, but it is interesting in the mean time to note the profound silence by which this awful list is greeted by those great protectors of the people, who for months and months have cried out so long and fiercely against the deadly automobile. Have you seen one great paper which has started a crusade against these butchers who go out to rob innocent, inoffensive animals of their lives, and in clumsily attempting to do so kill and maim equally innocent and inoffensive human beings? Well, I haven't seen a line of anything attacking these "murderers." Just imagine, though, what the same silent editors would have done and said if the casualty score of the automobile had been even one-tenth that of the hunters!

* * *

Bad luck is usually the first thing which comes to the man who waits for some one else to properly care for the vehicle he uses.

* * *

Thank heavens, the papers have at last found something good to say of an automobile! Heretofore not even its most enthusiastic admirer has ever thought of claiming for the motor vehicle the glory of being a burglar banisher; but such it certainly is, if we believe what we read in the daily papers—and, of course, we do believe everything we see and read in them. While some gentle cracksmen were engaged in preparing to rob one of the very few houses in Westchester County which had not before been visited by them, according to the newspapers, "an automobile owned by a millionaire passed at a rapid rate of speed, and a moment later two men were seen running away from the scene." You see, those burglars, hardened criminals though they were, had quite naturally been close readers of the yellow journals, and knowing therefrom how deadly the automobile is when "owned by a millionaire," they had not the courage to continue burgling when they knew that so terrifying a thing was in the same county with them. Whereupon they at once sought safety in flight, leaving behind them "thirteen augur" holes in the door they had been at work upon prior to the passing of the aforementioned millionaire and his automobile. If I was inclined to be critical I might be tempted to ask just how the yellow journal knew all this in time to print the story of it next morning, but as the paper in question is conducted so as to appeal almost solely to gents of the kind who were so badly frightened, it is but natural that the gents in question should see to it that their own particular paper did not remain in ignorance of how "the automobile owned by a millionaire" had at last trespassed upon even the sacred rights of the housebreaker.

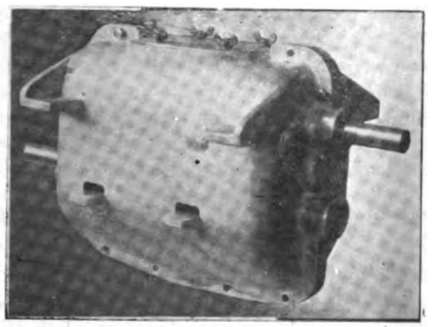
THE COMMENTATOR.

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MOTORS AND GEARS

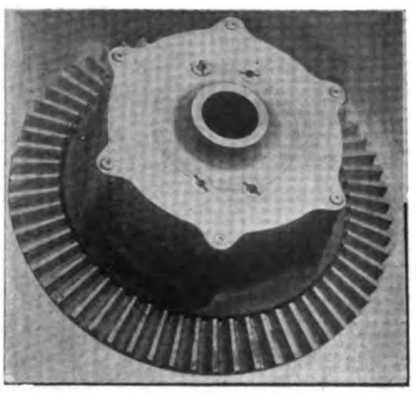
Fine Specimens of Machinist's Art Come From Reading—The Details.

With a cleverly designed and soundly constructed transmission gear weighing with case only fifty-five pounds, it is not a rash prophecy that the Reading Automobile & Gear Co., of Reading, Pa., which will shortly become the Relay Motor Car Co., will go far and fare well. The gear, which is but one of



several devices bristling with good points, need only to be seen to be appreciated. The Motor World man was profoundly impressed with the high character of the workmanship apparent, and with the smooth running and absence of friction that frequently marks other gears.

This transmission gear, styled the Wyoma, a good idea of which will be obtained from the illustration, has three speeds forward and one reverse, and only two operating levers. It will transmit up to 20 horsepower. The upper, or driving, shaft, is connected direct to the engine shaft, without any intermediate clutch mechanism. This insures positive drive. An entirely new system is employed, no bevel gears being used; the gears are always in mesh, and the power is

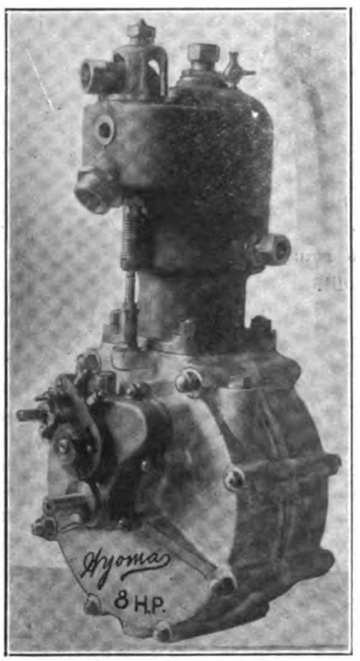


transmitted through hardened steel clutches, securely keyed to a 1¼ inch shaft. Provision is made on lower axle for pinion brake wheel.

The gear is self-contained in an aluminum case, with extra long shaft bearings, and shafts arranged one above the other, which allows top shaft to be on a plane with engine shaft, and which transmits the power to lower shaft, this shaft being in direct alignment with rear axle. This construction allows the gearing to run smoothly and lessens the strain on the universal connections. A ball thrust is fitted at each end of shaft.

The aluminum case is 8 inches wide, 16 inches long and 12 inches deep, outside dimensions, and has four lugs on outside, drilled with holes 11 inches between centres for attaching to frame; also has a removable lid, 4 by 6 inches, to allow easy access to and inspection of gear.

The Wyoma differential spur gear, also shown, is adapted for either 1¼, 1⅜, or 1½ inch axle. It has a manganese bronze bevel gear, its extreme outside diameter being 10⅛ inches; width over all, 4½ inches. The gear and cover are fastened by a new method. The spur gears are made with a



new pattern tooth, which is strong and durable, without back lash. The gear is made for direct drive, and has rod transmission. Its weight, with bronze gear, is twenty pounds, and the price is $30.

The single cylinder motor has a bore of 4 inches and a stroke of 4 5-16 inches, and develops 8 horsepower at 1,500 revolutions a minute. The height is 25 inches; width, 13 inches, and weight, 135 pounds. The two cylinder engine dimensions are 4 by 5 inches, weigh 265 pounds and develop 15 horsepower.

Car From St. Joseph.

An automobile possessing some interesting features has been designed and built by C. S. Gilbert, No. 1,312 North Twenty-second street, St. Joseph, Mo. The vehicle is a 6 horsepower gasolene car, fitted with heavy wood wheels, with G. & J. detachable tires 28 by 3 inches. A 1¼ inch square front axle and 1½ inch live oak axle, with standard 4 feet 8½ inch tread, is used, with spur gear differential, and ½ by 1 inch heavy Baldwin roller chain.

The transmission gear has three forward speeds and reverse, all operated by a single lever, and a powerful foot brake. The speed is controlled by shifting spark, this lever being attached to handle so it is always at operator's hand.

The engine is 5½ inch bore by 4½ inch stroke. The special feature about the car is the large diameter of cylinder and short stroke, this permitting of high rotative speed without excessive piston speed.

A special strong transmission that is very simple and not liable to get out of order is used. A strong reachless gear suitable for Western roads is fitted, and all machinery



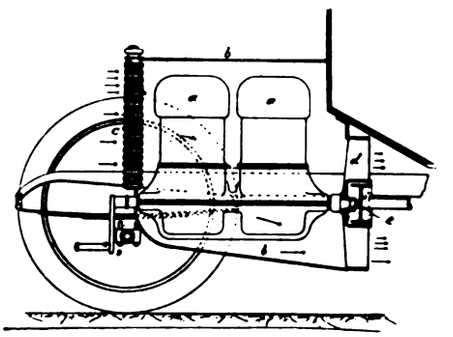
is attached to angle iron frame, there being absolutely nothing attached to the body. The latter may be removed in one minute by taking off four nuts.

The storage capacity is twelve gallons of gasolene and six gallons of water. A large amount of radiating surface is provided, and the water will last almost indefinitely.

Maybach's Fan for Forced Draught.

No small amount of attention has been given by the makers of the famous Mercedes car to the method of cooling. The "bee hive" radiating system is well known, and now Herr Maybach, the inventor of the Maybach carburetter and other devices used on the Daimler product, has brought out a fan radiator, by means of which a system of forced draught is put into operation.

The bonnet over the engine and the tray



underneath are airtight, and have not the usual ventilating slits. In the fore part is fixed a vertical radiator, on the principle adopted in the Mercedes type; a tank pierced with multitudinous air tubes. A fan is fixed to the flywheel of the motor which drives out under the footboard the heated air round the engine and at the same time sucks in a supply of fresh cold air through the tubes in the radiator tank. A double advantage is secured by this airtight bonnet. The smell of the hot air which sometimes escapes from the bonnet and wafts its unpleasant odor into the faces of the occupants is drawn under the car and expelled behind.

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STEEL ROAD IS FINISHED

A Formal Demonstration of It Proposed—All Elm Street may be Railed.

After three and a half weeks of tedious work, the first experimental section of steel road to be laid in New York City was completed yesterday. This is the piece one block long on Murray street, from Broadway to Church street. It was laid under the supervision of a special committee of the Automobile Club of America, of which Jefferson Seligman is chairman and Gen. Roy Stone and Charles M. Schwab are members. The foot-wide steel rails used were donated by President Schwab, of the Steel Trust. This piece of road is in particular designed to test the value of the steel rails for heavy trucking, and it is bu one of several stretches that are to be put down in the city. There is quite a grade on Murray street, and as there is only one track laid, and that in the middle of the street, trucks going up hill will have the right of way on it.

On Tuesday, when the road was ten-elevenths completed, that is to say, when ten of the eleven forty-foot rails which form it had been laid, Gen. Stone visited the scene to make an inspection. He was accompanied by a representative of the Motor World. It was a bitter cold day, and the general wanted to see if the road was suffering any from contraction. The ground was then frozen so hard that the men working on the road had to build fires on the granite blocks and use hammer and chisel to pry them loose. In spite of these conditions an inspection failed to reveal any ill results from contraction. The rails were then laid for all but 40 of the 440 feet of the block, and the finished part had a promising look, the paving stones having settled so that they were about flush with the rails. The scheme had a very practical look, but the truckmen driving over it did not know what it was all about. They did not try to drive so as to keep the wheels of their vehicles on the rails and their horses on the stones between them, but they did prove very satisfactorily by their ignorance tha the rails with their very slight ridges on the outside, in no way interfered with either horses or trucks. The teamsters drove over them and pulled out diagonally without knowing that the rails were there. The drivers seemed to think that the steel plates were some part of a new subway, and had nothing to do with them. Now and then, when some drived did apparently without intent follow the rails, it was plain to observers that his traction was easier. From what little could be studied in this informal way the road commended itself as a sound and practicable proposition.

General Stone was much gratified when the Motor World man told him that he had taken observations on the road last Friday after the snowfall, and had noticed that the horses did not slip when they stepped on the plates. The surface of the rails is not polished, and the shoes of the horses seemed to get a good hold on the rough finish. The fact of the rails not being corrugated or indented in any way had been the subject of some criticism. When General Stone was spoken to in regard to this he explained that the small quantity of rails turned out, only enough to build a mile of road, had prevented the production of plates with indentations, but that Mr. Schwab had said it would be perfectly easy to furnish rails of that sort when any quantity is wanted.

General Stone's idea is that the rails should have horizontal notches in them about six inches apart, and so cut that they would have but one wall, like the teeth of a ratchet, and that wall or back would be toward the down grade portion. Then, if a horse should happen to step on a rail and his foot slipped the caulks of his shoe would slide right back into the notch and there be checked. Automobile and other rubber tires would sink into slight depressions of this description and be prevented from slipping and arranged as described, such notches would be equally effective for vehicles going up or down a grade. The fact that the rails have no roughening or depressions to prevent slipping on them in wet or icy weather may, it is admitted, detract some from the satisfactoryness of the experiment, but Gen. Stone is sanguine in the belief that the value of such roads will be sufficiently demonstrated to lead to the construction of other stretches.

It is known that Borough President Cantor and the City Engineer are greatly interested in the experiment, and Gen. Stone divulged the news that if the experiments of the Automobile Club are successful, new Elm street will be laid out with two steel tracks in it.

Owing to the unsatisfactory nature of the demonshtration furnished by the haphazard driving on the rails of truckmen who have not yet learned what they are for, it was suggested by the "Motor World" representative that a day be set and arrangements made for a formal test to be made by a heavily-loaded truck being drawn first over the stone paving and then over the steel tracks, and that the Mayor and others interested be invited to witness the test. General Stone approved the suggestion and remarked that he had already planned to have an empty wagon hauled over the stones and the rails by a rope, with a spring balance attached, so that the difference in the traction could be measured.

The idea of having a formal demonstration on the road met with the approval of Chairman Seligman also, and it is probable that an exhibition date will be fixed for some day in the near future.

The next section of steel road to be laid will be in Seventh avenue, above One Hundred and Twentieth street, where a quarter or a half of mile of rails will be put down.

Steel roads cost about $4,000 a mile, according to General Stone, and are no more expensive than macadam roads. Some years ago an experimental section was laid in Chicago, but it was all wrong and did not commend itself. The steel plates used were too thin and broke, and they were laid without proper foundation and sank into the ground.

The work of laying the section in Murray street, New York, was interesting. It was not unlike the laying of a railroad, except that there was no wide and deep roadbed and no cross ties. Instead of ties, bar iron braces connected the rails every thirteen feet to keep them from spreading apart or pushing together. In putting down the rails two trenches, each a little more than a foot wide and two feet deep, were dug four and a half feet apart. On the bottom of the trenches were laid the granite blocks taken up from the street. On top of the blocks is laid broken stone and then gravel, and this is pounded together into a firm bed. The rail is laid in this bed and pounded down to a level with the abutting paving blocks. The work is done with great care and proceeds very slowly. A spirit level is used to see that the rails are on the same plane and that the grade is preserved. Working in Murray street, the men had to dig big holes in the ground every forty feet, where the rails were to be joined so that the riveters could get into them and do their work. Running in an open country, the rails would be raised to be riveted and this would not be necessary. This experimental stretch was laid at a great disadvantage, with inexperienced men and took twice as long otherwise.

Pros and Cons of the Limousine.

There is nothing about a car that will attract more attention than a Limousine body. The idea of having a glass shield and curtains to be drawn or otherwise, as desired, is a good one, but in regard to the glass front extreme care should be taken as to its use. Perhaps when starting on a journey the screen will be down, and after going some distance it will be raised, and then the passengers may for certain expect a chill or influenza. In extremely cold weather, when going a distance the glass will be found most comfortable, sheltering and shielding the passengers from the chilly blast; but if a storm arises, then the glass has to go up again through an apaque mass caused by the mud.

Subjects for British Lecture Season.

Subjects suggested for papers to be read at a forthcoming "lecture season" of the Automobile Club of Great Britain are as follows:

Road Experiences.
Continental Experiences.
Motor Car as Feeders for Railways.
Motor Car Bodies.
Iron Wheels versus Wood Wheels.
Governed Engines versus Ungoverned Engines.

$10,000 for Side Slip Preventive.

It is proposed to have the Automobile Club of Great Britain raise a prize fund of $10,000 to encourage inventors to study some preventive measures for sile-slip.

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WANT TWENTY MILLION

From Congress for Improved Roads—Also Suggests National License Plan.

In calling a convention to be held at Chicago during the show, to ask Congress for a $20,000,000 appropriation, the National Association of Automobile Manufacturers not only make a move for road improvement, but also pave the way for the securing of reduced rates to the Windy iCty.

The action referred to was taken by the Executive Committee of the association on December 3, whwen the following resolution was passed.

"RESOLVED, That a convention be called for February 14th to 21st, both inclusive, at the Coliseum, Chicago, to approve a bill wwhich will be introduced during the present session of Congress to appropriate twenty million dollars ($20,000,000.00), to be expended under the direction of the National Government for a national highway; this twenty million dollars to be distributed in the various States according to population, on application by any State or county, the State or county agreeing to furnish two thousand dollars ($2,000.00) for each one thousand dollars ($1,000.0) appropriated by the Government."

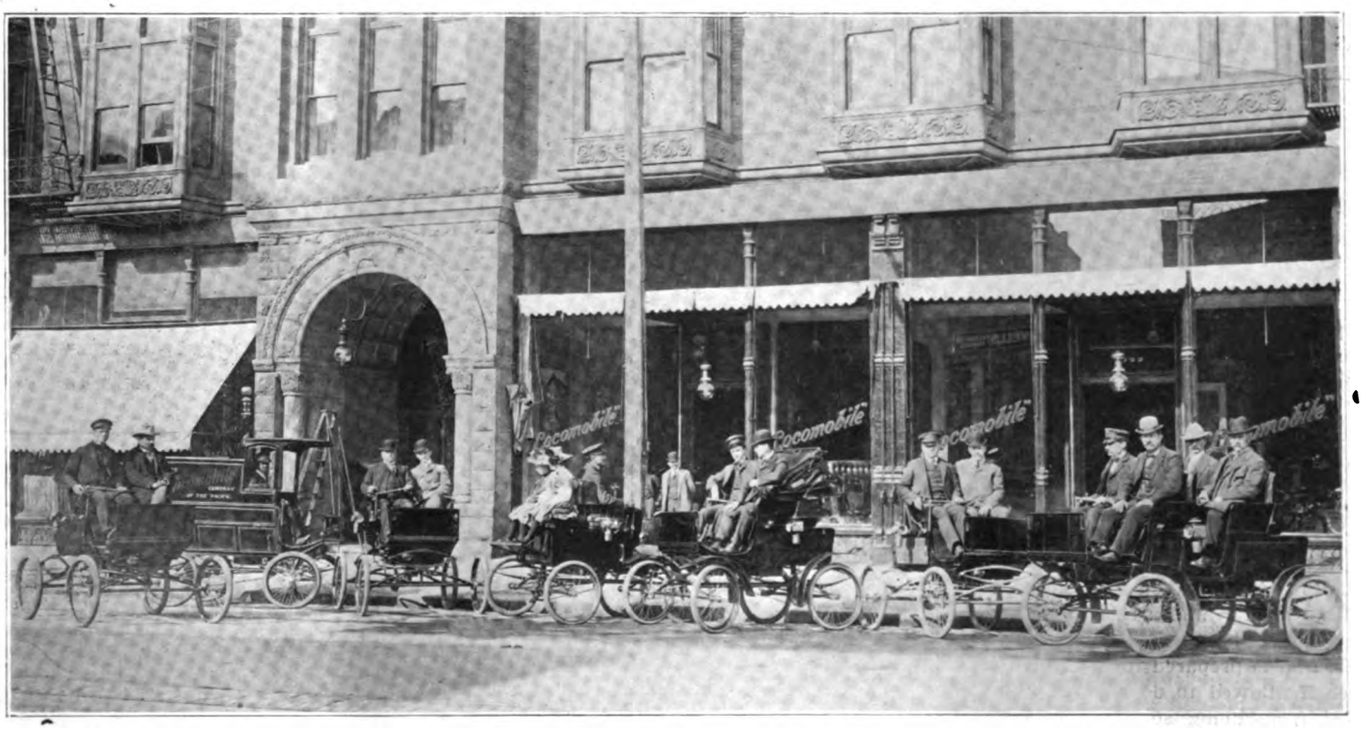
The matter of license was also taken up and action independent of the Atuomobile Club of America was taken. National instead of State licenses are now favored. It was

"RESOLVED, That the National Association of Automobile Manufacturers petition the Senate and House of Representatives to prepare, at the earliest practicable date, a bill providing for a national license to drivers of automobiles which will permit interstate commerce to be carried on without inconvenience which would result from local licenses to automobile drivers."

"RESOLVED, That Mr. J. Wesley Allison be appointed a committee of one to call upon the Senators and Congressmen and ask their action at the earliest possible date."

One of San Francisco's Salesrooms.

After spending some little time in the East, E. P. Brinegar, the well-knownw San Francisco, Cal., dealer, left New York last week en route for the coast. One result of his trip was a needed strengthening of his lines, three such trump cards as the Oldsmobile, the Winton and the Vehicle Equipment Company's line of electrics, being secured. The establishment where these lines will be displayed, Brinegar's store, in San Francisco, is illustrated herewith, and is pretty good evidence that they will be well housed and taken care of by this enterprising dealer.



Receipts Were Sufficent to Pay Expenses.

The financial accounts of the Paris-Vienna race have at last been cleared up. All the entrants, of course, had to pay entrance fees. These fees go toward the expenses of the staff, the timekeepers and the innumerable tips paid along the route. The receipts and expenditures have been found to balance, so that the amounts guaranteed by certain individuals and the club have not been called up.

The agency for the Franklin car, made by the H. H. Franklin Mfg. Co., Syracuse, N. Y., has been acquired by the American Storage Co., W. 38th street, this city. Incidentally, it is said that a good-sized order was placed with it.

MARVELLOUS IGNITION

From Stuttgart Comes a Magneto That is Claimed to be Revolutionzing.

A Herr Eisemann, of Stuttgart, has recently invented and perfected a new form of ignition, which will, it is claimed, become universal, and which is actually creating a sensation in automobile circles. It has been adopted for the new Mercedes car.

It is a magneto of the ordinary type, but with two commutators, which form part of the machine itself. One of these collects the alternating current and converts it into a continuous current; the other distributes the current to the four cylinders. The continuous current from the magneto passes into a transformer coil in the secondary circuit, which gives a high-tension current, capable of flying acros sthe terminals and creating a very long spark. A spark of nearly half an inch was seen when the machine was revolving by turning the driving shaft by hand.

The armature of the magneto is carried on a sleeve on the driving shaft, and its position can be changed with regard to the driving shaft in such a manner as to advance or retard the ignition by cutting the lines of force earlier or later. The whole apparatus takes up very little more room than the ordinary magneto, and can be placed close by the cylinders, so that the high-tension wires will be very short, and will not be in proximity to other parts of the metal work. The only difficulty in this new ignition is the question of the insulation of the high-tension wires, but they will be so short and direct that a little care in the placing of the apparatus will entirely obviate this danger.

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VALUE OF GOVERNORS

Different Methods of Regulating Engine Speeds Compared—Advantages of Throttling.

The automatic governing of the speed of gasolene motors is an interesting question, and a problem to which much attention is just now being paid. It is important, as upon its proper understanding economy in motor operation is absolutely dependent.

In the automobile motor conditions are not favorable to the use of a governor, such as is used in stationary motors, ad in the majority of cases the timing of the ignition is used to vary the speed. Under this method the primary circuit breaker is attached to the motor in such a way that it can be moved forward or backward in order to produce the spark after compression has begun to lessen, at the highest point of compression, or just before that point is reached. The first produces combustion under a gradually lessening pressure, hence reducing the power of the explosion. Ignition on the highest point of compression gives a far more powerful impulse, inasmuch as the same amount of vapor is exploded in a smaller compass. When ignition occurs just before the highest point of compression is reached, the power is still greater because of the extremely high pressure obtained by compressing, not only the original volume of vapor, but the heated gases generated by the early ignition as well. Care is necessary that the spark is not timed so far ahead as to cause the motor to kick back.

Now, though the speed of motors may be governed by iguition, it is obviously not the most economical method of obtaining the desired result, for under all these conditions the cylinder takes in the full charge of vapor, and is prepared to give forth its full power if allowed to do so; but, being prevented from doing so, the portion of the charge which is not used is, of course, wasted and discharged into the exhaust. In cases where the combustion is started when the compression is lessening, the power derived is low, but the full charge is consumed.

The necessity for devising some method, therefore, of governing speed, and at the same time economizing fuel, is obvious. At present two different methods are under experiment. One is a variation of that known as the Panhard type. It consists of a centrifugal governor operating on one end of the cam shaft, and so constructed as to throw the cams completely out of gear, completely under the valves, or in any intermediate position. The cams, instead of having surfaces parallel with the shaft, are cone shaped, so allowing the valves to be opened to any extent between the position at which the motor would run at its normal speed and that at which it would shut off entirely. The latter condition would arise only when the motor was suddenly relieved of a load and began to race. The governor would then cut out the cam, and thus, allowing no exhaust to escape, put a heavy braking force on the motor when the exhaust stroke took place. This condition would maintain until the speed were so reduced that the governor contracted sufficiently to throw the cams partially under the valves, after which the cylinders would begin exhausting a certain amount of their contents and on the return strokes would take in sufficient fresh vapor to keep the motor running at reduced speed.

The normal speed of the motor is provided for by setting the cams so that when in full operation they will allow sufficient exhaust to escape that the cylinders can be again filled, or nearly so, with the new mixture, but additional provision is made for the exhaust valves to be still further opened, so that the exhaust is entirely free from any restraint which would retard free action and power development. This feature is termed the accelerator, and is the only part of the mechanism that is not automatic. It is operated by hand or foot.

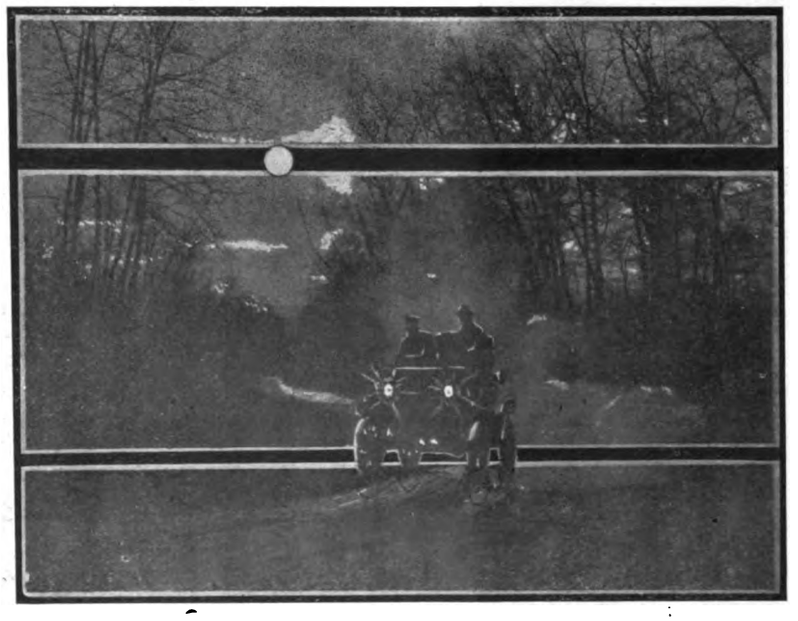
The other method is that of having the cams carried on a shaft movable from one side to the other under the valves, the distance of the movement being such as to allow the cams to open and close the valves during varying periods of the time or not at all. The cams are so shaped that for a full exhaust they maintain the valves in open positions the full length of the return stroke, while at other positions they vary the quantity of exhaust down to nothing.

The most simple method of regulation is by reducing the charge, supplying the cylinder with less than its normal quantum of explosive mixture. The volume of vapor in the cylinder is thus insufficient to generate full power, and even from such power as is generated must be deducted the loss by friction resulting from the piston striving to draw a full charge through the reduced aperture.

AN ELECTRICAL CLUTCH

Invention of the Versatile Jenatzy Proves to be Wonderfully Effective.

M. Jenatzy, who is nothing if not radical, has turned his attention to electrical clutches. He has fitted one of these to his 100 horsepower four cylinder car, one portion of the clutch being caused to become an electro magnet by current passing from the accumulators through a reducer to what, under ordinary circumstances, would correspond to the female portion of an ordinary friction clutch. In M. Jenatzy's vehicle, however, the parts of the clutch are not coned, the opposing faces of the clutch being metal and flat in the vertical plane. The grip of the driving upon the driven face is obtained solely by the amount of magnetic force permitted to the magnetized portion of the clutch. The amount of current passing to the latter is controlled through the reducer entirely by a clutch pedal in the ordinary way, and the clutch control obtainable is quite extraordinary. Indeed, so great could the grip of one part of the clutch upon the other be made that the huge car could be started on its third speed, while the amount of slip could be varied to an infinitesimal degree.



IN THE GLOAMING.

The Week's Exports.

Brazil—54 cases automobile machinery, $780.

Liverpool—4 cases automobile vehicles, $3,580.

Among the members of the Automobile Club of America elected last week were the following: James B. Dill, H. S. Harkness, C. H. Gillette, R. G. McDonald, Dr. D. G. Cochran, Walter C. Runyon; M. S. Hollis, Baltimore.

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AUTOMATIC INTAKE VALVES

Bennett Cup Winner Takes up Cudgels in Their Behalf—His Experience.

Referring to the tendency to use mechanically operated inlet valves as opposed to inlet valves opening automatically, S. F. Edge, the winner of the Bennett Cup, says that the greatest theoretical advantage to be obtained is, that no time is lost in the valve opening, and consequently, full advantage is taken of the whole of the stroke. In the ordinary suction valve it is claimed that half-an-inch stroke of the piston is lost, it taking that amount of movement to create vacuum enough to overcome the pressure of the springs on the valves. He says that, owing to the three port valves on the Napier engine, only one pound pressure to the square inch is required to overcome the pressure of the springs, and that one-eighth of an inch forward movement of the piston is sufficient to give this pressure, and by making the throw of the crank one-sixteenth of an inch longer the same initial pressure and volume are obtained as would be gained by mechanically operated inlet valves.

He adds, "that in the closing of the valves the advantage rests absolutely with the automatic inlet valve, which must close practically instantaneously, and invariably at the correct moment suited to the speed of the motor.

"Some correspondents suggest that the puffs noticed from the chimney of a surface carburetter are caused through the inlet valve not closing properly, but of course it should be well known that this is not the case, but is caused by the flow of gas being suddenly checked through the closure of the inlet valve, and this check causes the incoming gas to recoil and puff out of the chimney."

The points Mr. Edge makes against the mechanically operated valve are as follows: "First, there is the additional complication and weight of the second valve-shaft and gear-wheel, and the extra set of valve-lifting rollers and guides. Much heavier cylinder-head castings; two openings in each head instead of one, hence twice the number of joints to keep tight. Greater difficulties in getting at the valves. Heavier engine body castings, as it has to be arranged with the spaces and necessary lugs, bearings, etc., for the second valve shaft.

"Surely the great aim to-day should be simplicity and reducing the number of working parts, not increasing them!

"My own experience with the hundreds of users of automobiles has been that one and all desire simplicity, and I do not think that any one can contend that this is arrived at by the addition of the mechanically operated inlet valve. It has one advantage at the present time that I do not think has been touched upon, and that is the engine when running light will run slightly slower."

Parlor Car for Canines and Felines.

An object of much interest to Cleveland (O.) people is an automobile ambulance used for a queer sort of patients—no less than dogs and cats. Stray canines and felines are conveyed in state to the haven where skilful treatment and kind ministration await them, and they are made to feel at home on the journey by two thoroughbred bulldogs belonging to the establishment.

The proprietor of the hospital is Dr. W. F. Staniforth, and it is located at No. 684 to 688 Central avenue. A steam automobile has been fitted up especially for the purpose of conveying the dogs and cats to and from the hospital. The upper part is used for cats and the lower part for dogs, and is nicely fitted up with drinking trays, rugs, etc.



Dr. Staniforth purposes to build in the country near Cleveland a large home for stray dogs and cats, with a hospital attached for the care of those sick and injured. He invites the co-operation of people who admire dogs and cats to aid in the enterprise so as to build something that would be a credit to the entire country.

New Quarters for Long Island Club.

The Long Island Automobile Club has moved from the corner of Bedford avenue and Fulton street and has secured new and more commodious quarters in the house of the Lincoln Club, at No. 65 Putnam avenue, between Irving Place and Classon avenue.

KANSAS CITY'S NEW LAW

Three Speed Districts Provided for in the Ordinance—Other Regulations.

After undergoing considerable modification, the bill before the Kansas City (Mo.) Board of Aldermen is again up for consideration. In its present form it provides that instead of a speed limit of ten miles in the district bounded by Fourth street, State line, Nineteenth and Cleveland avenue, which the lower house defined, the city is divided into three speed districts. The maximum speed between the river, Fifteenth street, Broadway and Locust street is six miles an hour. Between Locust and Troost, Fifteenth and Twentieth, Broadway and the State line it is ten miles an hour. In all other parts of the city the maximum speed is fixed at fifteen miles an hour.

The size of the letters or figures on the side lamps is reduced from four inches to three inches, and a four-inch number must in addition to this be suspended on a leather apron at the back of the vehicle.

The minimum fine is increased from $1 to $5. The maximum remains at $500.

The examining board to pass on the qualifications of applicants for licenses to operate the machines is to consist of the superintendent of streets, who is to be chairman, and two expert autoists to be named by the Mayor. The lower house designated the examining engineers of the city.

The ordinance is to apply to visitors and tourists in all respects except licenses and numbers.

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BENNETT CUP RULES

Provisions for Contest in Which American Cars Will Complete are Iron Clad.

In view of the fact that America is to play a part in the contest for the Bennett Cup next year, the rules governing the race have now a new and particular interest. It will be noticed that the name of the Automobile Club of America is not included among the clubs specifically mentioned. It will have to be voted to be permitted to contest, as provided for in the third paragraph of Rule I. The A. C. A. is recognized by the French club, however, and as it is the only one in this country that will apply there is no doubt but what it will receive and retain recognition.

Rule 1.—Every foreign automobile club recognized by the English Automobile Club is entitled to challenge for possession of the cup.

The recognized clubs are: The Automobile Club of France, the Belgian Automobile Club, the Swiss Automobile Club, the Turin Automobile Club, and the Automobile Club of Germany.

Any club not on this list, but desiring to be enrolled, must be voted on by a majority of the foregoing clubs, on condition that this majority shall include the club or clubs of the country t which it belongs. On the application of one club, however, another club may be disqualified by the ruling of the majority.

Rule 3.—Any recognized club wishing to challenge shall notify its intention to the holders of the trophy some time before the first day of January of the particular year; such notification to be sent in a registered letter addressed to the president. This letter must state the number of vehicles to be entered. The challenging club shall at the same time deposit with the club in possession of the trophy the sum of one hundred and twenty pounds. This deposit sum to be returntd to each one of the competitors presenting himself at the start.

The president of the club holding the trophy, even though his club take no part in the race, shall in all cases be notified by registered letter of any club desiring to compete.

Rule 4.—Each club may be represented at the contest by one, two, or three vehicles. Should one or two only of the three appear at the start, this fact will not prevent the other competing clubs from exercising their right to run their full complement of three vehicles. Should two or more clubs of the same country desire to enter vehicles, it must be understood that three vehicles only are admissible for the representation of each country. The clubs of the same country or nationality must, therefore, select for themselves the three vehicles they wish to be entered. Should they be unable to agree the vehicles will be admitted in their order of application.

Rule 5.—The cup shall be contested at some date between the 15th of May and the 15th of August in each year. The precise date must be determined by general consent of the competing clubs, and should be fixed as early as February 1 in each year.

Rule 6.—In the event of the club in possession of the trophy receiving challenges from several clubs, there would be but a single race, the challenged and the challenging clubs being represented each by its complement of three vehicles.

Rule 7.—The competing vehicles must come within the following racing definitions laid down by the Automobile Club of France in 1899: The vehicle must weigh over 400 kilos. (7 cwt. 3 qurs. 14 lbs.), and must carry, seated side by side, at least two passengers, each of a minimum weight of 70 kilos. (11 stone 3 lbs.), or, should the passengers' weight fall short of the above figures, the deficit must be made up by ballast. The car weight of 400 kilos. is taken to mean weight unladen—that is, without passengers or fuel (coal, petrol, water and accumulators), without tools or spare parts, bags, clothing, or provisions.

Rule 8.—The vehicles must be constructed wholly and in every detail in the country of the clubs they represent.

Rule 9.—The vehicles must be driven by members of the competing clubs, and the two seats must be occupied during the whole of the course.

Rule 10.—A committee shall administer the rules and regulations. Each competing club shall nominate a delegate. Mr. Gordon Bennett, the presenter of the cup, is entitled to a seat on every such committee. The Automobile Club of France also, even in the event of its taking no part in the race, has the right to be represented on the committee by a delegate. The delegates shall nominate from their number a president, who will have the casting vote in the event of votes being even. Should the committee be unable to decide upon a president he shall be nominated by Mr. Gordon Bennett, or, in default, by the President of the Automobile Club of France. The committee shall appoint a starter, an umpire, and timekeepers, and these need not be members of the committee. The committee is empowered to enforce strict obsrvance of these rules, and to adjudicate on any incidents that may arise therefrom. This committee shall officially register the race.

Rule 11.—The race shall be run on a road in a single stretch, over a distance of not less than 550 kilometres (about 344 miles), and not more than 650 kilometres (416 miles). The course may be made from town to town, or divided into several courses, out and return—the distance of each course, however, not being less than 150 kilometres (93¾ miles).

The club holding the trophy is entitled to choose the route, and it is incumbent upon this club to locate and specify the route precisely by means of a registered letter to the challenging club at least three months before the date decided upon for the race.

Should a change of route be found necessary subsequent to specification, a registered letter must be immediately despatched advising the clubs of the change. Such change shall not be made except in case of absolute force majeure, and only with the sanction of the committee appointed under rule 10.

Rule 12.—The race shall be run in the country of the club holding the cup. This club shall, however, be empowered to run the race in France.

Rule 13.—The start of the competing vehicles shall be simultaneous. They will be placed in the following order: In front, one immediately following, one vehicle of each of the challenging clubs in the order in which the challenges were received. Then the second vehicle of the club holding the trophy, followed in the same order by the second vehicles of the challenging clubs. Lastly, the third vehicles ranged in the same order.

Rule 14.—The first vehicle to cross the line of the finish shall be declared the winner. This vehicle will have won the cup for the club it represents, even should it be the only vehicle of its set completing the course.

Rule 15.—In case of a dead-heat between the club holding the trophy and one of the challenging clubs, the club holding the trophy shall retain the cup.

Rule 10.—In case of a dead-heat between two challenging clubs, they shall race again under the same conditions within two months, it being understood that rule 5 shall not apply. Should these two clubs be unable to decide upon a route, they shall cast lots. Should one of the clubs decline to run the second race, the other shall become ipso facto the holder of the cup.

Rule 17.—After the homolocation of the race, the cup shall pass into the hands of the winning club within fifteen days. In the event of a dead-heat, and while awaiting the decision upon such result, the cup shall remain in possession of the club already holding it.

Rule 18.—Should one of the challenging clubs be sole competitor at the start, it shall run over the course in a maximum time, to be fixed by the committee appointed under rule 10. Failing which, the club already holding the cup shall retain possession of it.

Rule 19.—It is understood that no club shall actually win the cup. The club merely holds the cup subject to the foregoing rules.

Rule 20.—In the event of the club holding the trophy ceasing to exist, the cup shall revert to Mr. Gordon Bennett, or, in default, to the Automobile Club of France.

Rule 21.—The races for the cup, whether they be run in France or elsewhere, shall always be run subject to the racing rules of tht Automobile Club of France, issued in 1899.

Rule 22.—The cost of transportation of vehicles and their fuel, etc., shall be at the expense of the owners of the vehicles, or of the clubs they represent.

Rule 23.—The traveling expenses of the committee elected under rule 10 shall be at the expense of the clubs they represent. The expenses of organization of the race (fees and travelling expenses of timekeepers, advertising, fees paid along the route, etc.), shall be paid by the club holding the cup. After the race these expenses shall be equally divided between the club holding the cup and the challenging clubs. It must be understood that the share due from clubs which have entered vehicles and have not taken part in the race thereby become forfeit to the club in possession of the cup. The £120 deposited under rule 3 will be paid by the club in possession of the cup.

Difference of Opinion Between the Judges.

Unexpected and smacking of opera bouffe methods was the ending Tuesday of the case of Mason Crocker, chauffeur of Reginald G. Vanderbilt, charged with speeding in excess of eight miles an hour. The case was tried at Jamaica, the defence being that the indictment was faulty and the Cocks law itself unconstitutional. At its close the prisoner was discharged.

Justice Forker stated that he did not believe the policeman's story, and that he thought Crocker was innocent. Justice Fleming at first agreed with Justice Keating in holding the prisoner guilty, the vote being two to one. Then in consequence of the protestation of Attorney Schoonmaker, he changed round and declared that as the prosecution had not proved that there was no local ordinance, as it should have done, he must find for Crocker. Justice Keating was still stubborn, but there were now two against him, and Crocker was dismissed.

Now the different parties concerned are trying to figure out just how matters stand. It is only clear that Crocker is free and clear. To a Motor World man Attorney Schoonmaker stated that he would take no further proceedings in the matter.

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INDICTMENT IS FAULTY

And Cocks Law is Unconstitutional, Claims Attorney for Vanderbilt's Chauffeur.

In addition to attacking the constitutionality of the Cocks law, counsel for Mason Crocker, chauffeur for Reginald G. Vanderbilt, contends that the indictment under which his client was arraigned is defective in two particulars. He asks, therefore, that the complaint be dismissed.

Both from its bold attack on the constitutionality of the obnoxious law, as related in the Motor World last week, and because of the nature of the defects referred to, the case possesses unusual interest. In a talk with the Motor World representative Lawyer George W. Schoonmaker called attention to this, and pointed out the grounds upon which he has asked for a dismissal of the complaint.

Crocker was arrested near Jamaica, Borough of Queens, and accused of exceeding a speed of eight miles an hour. He was arraigned in the Court of Special Sessions, Second Division, at Jamaica, and upon submission by Mr. Schoonmaker of the points referred to the case was taken under consideration by Judge Fleming.

In his brief Lawyer Schoonmaker touches upon the binding force of the Cocks and the Doughty laws, respectively, and holds, as have many other lawyers, that the former has not been repealed, and that one should be interpreted through its relation to the other, instead of separately, as the autophobes who are using it as a weapon against autoists insist upon doing.

"The word 'unjustifiably' in the first part of the petition must be deemed to refer to the amended part of the section also, and the complaint is fatally defective in not alleging that the defendant 'unjustifiably' did the acts therein set forth," contends the brief.

"The well known rule of noscitur a sociis applies to the construction of this section. Words and phrases in a penal statute are to be judged by those which they accompany or with which they are associated. The section in question begins by describing it as a misdemeanor to 'unjustifiably' run horses, etc. The part applying to the driving of automobiles is not a new section or new provision, nor even a new sentence. Leaving out the part of the statute applying solely to horses, the section reads as follows: 'A person driving any vehicle upon any plank road, turnpike or public highway, who unjustifiably . . . drives or operates an automobile or motor vehicle,' etc. It is not a crime in every case to run horses on a highway, neither must it be assumed to be a crime in every case to operate an automobile at a greater speed than eight miles an hour. The crime consists in doing these things 'unjustifiably.' Is it to be presumed that the legislature intended to make it unlawful for a physician to hurry to the bedside of a dying patient in his automobile, or for one of the chiefs of the Fire Department to hasten to a fire in his automobile, or for a man to run his automobile more than eight miles an hour under other circumstances in view of which all fair men might applaud the act?

"The defendant's view of the construction of the statute is borne out further by the fact that there is still upon the statute books, as part of the highway law, an act which regulates the speeding of automobiles. This act has not been repealed, nor is it expressly repealed by the act under consideration. If, therefore, the two acts can be reconciled and construed together this should be done. Here is the act referred to:

" 'No person driving or in charge of an automobile or motor vehicle on any street, avenue, parkway or driveway in this State shall drive the same at any speed greater than is reasonable and proper, having regard to the traffic and use of the highway, or so as to endanger the life and limb of any person.'

"It is fair to assume that the legislature, by the act of 1902, attempted merely to define more nearly the words underlined in the above section of the highway law. 'It is not,' they may be presumed to say, 'reasonable and proper to run an automobile more than eight miles an hour in a city or village, unless such speed is for some reason justifiable.' Courts should so construe an act as to fairly and reasonably carry out the legal intent of the legislature. Will the court in this case say that the legislature makes the absurd declaration that it is in every case unreasonable and improper (or unjustifiable) to run an automobile at a greater speed than eight miles an hour within a city or village?

"This cannot be, for in Section 163 of the same highway law, which also is not repealed, this provision occurs:

" 'No ordinance, rule or regulation adopted by the authorities of any municipality in pursuance of this section or of any other law, shall require an automobile or motor vehicle to travel at a lower rate of speed than eight miles per hour, within any city, town or village of the State in the built up portion thereof, nor at a lower speed than fifteen miles per hour where the same are not built up.'

"Here stands an unrepealed declaration of the legislature that it is not unreasonable nor unlawful for an automobile to run at a speed of upward of fifteen miles an hour in the portion of a city not built up, and expressly prohibiting a city or village from limiting the speed within that rate."

Proceeding to the point raised attacking the constitutionality of the Cocks law, the brief states:

"The sections of Title XVI of the Penal Code, including Section 666, are unconstitutional, as Section 668 provides that the fines collected under these sections must be paid to the American Society for the Prevention of Cruelty to Animals or to some other similar society.

"In the recent case of Fox vs. Mohawk and Hudson River Humane Society, 165 N. Y., 517, the Court of Appeals held that a law permitting a humane society to charge license fees for the keeping of dogs, and to retain the money, was violative of the provisions of the constitution prohibiting the paying or loaning of the moneys of the State, or of a county, city, town or village, to a private individual or corporation.

"It is true that Mr. Justice Cullen, who wrote the opinion of the court, said in a dictum that probably pecuniary penalties for offences would not fall within these restrictions because there was little right of property in them.

"But if the moneys do not belong to the State, county, city, town or village, to whom do they belong?

"If they do not belong to any of these public bodies they are certainly public moneys, and come within these restrictions.

"If they do not, they must belong to the individual who pays them, and then their payment to a private society would violate the provisions of the constitution prohibiting the taking of private property for other than public uses."

It was intimated by Mr. Schoonmaker that in case the Court of Special Sessions denies the motion to dismiss the complaint the appeal would be carried to a higher court.

Rural Free Delivery by Automobile.

What is thought to be the first rural automobile mail route in the United States has been established between Portland and Pennville, Ind. It covers a distance of twelve miles. Wilbur F. Hitt, of Indianapolis, a special agent of the railway mail service, has investigated it and is much pleased with it. The government officials at Washington are interested in the experiment, as it is expected that many automobile mail routes will be established in the near future.

Postoffice patrons at Pennville and small points along the line are served with mail twice each day by automobile. The machine leaves Portland at 8 o'clock each morning and 4 o'clock in the afternoon, arriving in Pennville an hour later.

Thirty minutes afterward it starts on the return trip, making the run home in an hour. For a time a large automobile, capable of carrying a dozen passengers, was in the service, but since bad weather set in a two-passenger runabout has been added to the service.

Wants a Jury Trial.

For the second time a Long Island automobile speed case is to be decided by a jury trial. Paul Verget, chauffeur for Cord Meyer, is the accused, and a jury has been selected and Dec. 13 set for the case. Deputy Sheriff John Garvin, who made the arrest, claims that the accused covered one-eighth of a mile in 15½ seconds, a rate of 29½ miles an hour. When arraigned at Hicksville Verget's counsel entered a plea of not guilty and asked for a jury trial. Verget's employer sides with him, and an array of legal talent, including a representative of the notorious Protective Association, was present at the hearing last week.

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THE TEAMSTER'S TESTIMONY

Experience of Truckman With Motor Vehicles Shows Remakable Economy.

While large corporations feel no embarrassment in purchasing and trying automobile wagons for hauling purposes, the question has been very pertinently asked how near is the time when the practical truckman who makes a business of cartage at load rates can adopt the motor truck? Bearing on this point a very interesting communication is found in The Teamster, a monthly publication published in the interests of truckmen, expressmen and livery stable owners. The document has the more value because of it being written by a practical every-day trucking concern, and bears on its face the stamp of having been written not to boom any particular product, but for the information of fellow teamsters. Throughout the article no manufacturer's name is mentioned. The letter was written for the Teamster by George F. Roth, president of the Rochester, N. Y., Carting Company. It is all the more interesting because of its appearance in a paper devoted to the interests of horse drawn vehicles. The letter is as follows:

"After carefully considering and gathering the information we could from disinterested parties, who know more about the storage batteries and electrical appliances than ourselves, we concluded that the time had come when we must experiment with vehicles propelled other than by horses, and for that reason we placed an order last March for a six-ton electric truck with electric hoist, and one three-ton freight wagon, which were delivered on the 9th day of June last; since which time they have been in constant use and are giving the very best satisfaction. While we realized at the time that we bought in spite of the claims made by the manufacturers that trucks for heavy work propelled only by friction could not be a success in muddy or unimproved roads, and for that reason under the present condition of things, roads, climate, etc., that it would be a long time until motor-propelled vehicles would supersede the horses, we have added these machines as an auxiliary, as it were, to our business to help us out when we are very busy, at which time we always have good roads and on bad roads or in heavy falls of snow of course will have to fall back on the horses. We are so very well pleased with the working of these trucks that we shall, no doubt, place an order for at least four more for next spring's work.

"As to the cost of maintenance would say, we purchase our current from the Local Electric Company, and after careful computation from the time that we put them into commission, until the present time, we find that our current is costing us forty-one cents per day per wagon, oil about five cents per day, making a total cost for oil and current forty-six cents per day. It does not take any mechanical engineer to run them, and we have had no trouble whatsoever up to the present time.

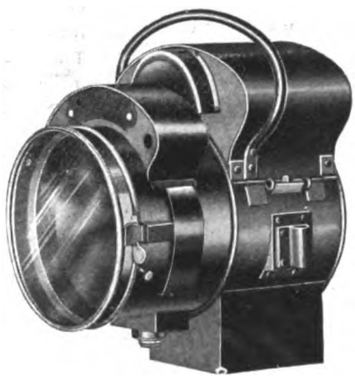
"In connection with the computing of the cost of running these trucks, you should take into consideration the fact that with the freight truck we can do fully twice as much freight hauling as we could with the team, and when it comes to the windlass truck, that, of course, will do very much more work than a hand windlass; for instance, we can hoist in five minutes with this truck with one man what would take six men at least one hour to hoist, so that the saving in that is very great.

"Whether it will be steam, gasolene or electric, we firmly believe that the time is coming when most of the heavy trucking will be done with motive power.

"I forgot to say the small truck is guaranteed to draw a load thirty miles at the rate of eight miles per hour on one charge, and the six-ton truck is to carry a full load twenty-five miles at the rate of six miles per hour on one charge. We have given them the test, and they have stood up to it."

The racing committee of the Automobile Club of France and the Chembre Syndicale committee are dispatching agents to examine the roads in Spain that would form part of the route from Paris to Madrid, suggested for the next international race.

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LEAGUE OF STATE CLUBS

Scope and Plan of Proposed Organization Outlined by Projector.

Assurances of support having been received from nearly every automobile club in the State, the call for a meeting to organize the Associated Automobile Clubs of New York will probably be issued within the next week.

With regard to its scope and plan of operations Secretary Frederick H. Elliott of the Syracuse Automobile Club said to the Motor World representative:

"Such an organiation would be of great help in securing favorable legislation at Albany, from the fact that the clubs throughout the State would be constantly working with their local representatives in both houses at Albany, and the fact that the Senators and Assemblymen would be approached from all sections of the State would mean a great deal toward securing such legislation as would be favorable to automobilists in general throughout the State.

"There are many other good points to be considered in reference to this organization as it would form a centralization of power taken from the influence and wealth of the many automobile clubs in the State; the officers would become acquainted with one another, and the subject of roads would be well agitated; the securing of signposts in the different counties could be taken up, and, in fact, there are many things which could be accomplished by such an organization where nothing is done now whatsoever to accomplish these ends."

Avoids Infamous Plank Road.

It is not surprising that the notorious "plank road" across the meadows between Jersey City and Newark retains its unenviable reputation. Little attempt is made to keep it in any sort of repair, and with the progress of time it gets worse—although any one who has driven over it in a car will be inclined to dispute the assertion that it could get worse.

At the present time, as the Motor World man is able to state from recent unpleasant experience, it is just about as bad as a road can be. Perhaps corduroy paths, termed roads by courtesy, can surpass it, but even this is not absolutely certain, so numerous are the loose and broken planks, so deep the mud and water holes to be found along its course.

Knowing well the infamy of this road enterprising Jerseymen have been on the lookout for some way of evading it without making the long detour via Staten Island. Success has crowned their efforts, and Frank Eveland describes a route which, while by no means "sandpapered," is yet a tremendous improvement over the plank road. The directions are as follows:

Cross the ferry to Jersey City, and one block from the ferry turn left one block, then turn right to Courthouse, then right one block and left, continuing to the Hudson County Boulevard. Turn right on the Boulevard to Newark avenue, then left through Marion and across bridge to East Newark, along the trolley tracks to Broad street, Newark.

Pleased With his Packard.

It transpires that the run between Boston and New York made by a Packard car without a stop, chronicled in these columns last week, was also a record breaking run in point of time, being a few minutes faster than anything yet made between the two cities. The Model F Packard, which did the trick, is a fac simile of the car owned and operated by Henry B. Joy, of Detroit, which went through the reliability contest in such fine shape. This car, which is shown by the illustration as being still in its contest "clothes," was delivered to Mr. Joy on May 1 last, and has been in constant use since. He took it to Watch Hill for his summer vacation, and it was entered in the run without any special preparation.



Awards for Tire Makers.

In view of the many tire troubles met with in the recent Reliability contest, the committee of the A. C. A. which had it in charge, makes special reference to the matter in its report. The committee goes so far as to suggest the advisability of holding a special tire contest, giving suitable rewards to those manufacturers who shall succeed in producing the best tires for road use.

Silence may be golden, but it never yet succeeded in borrowing a dollar or selling an automobile.

QUAKER CITY'S LIMIT

Seven Miles an Hour is Fastest Speed Solons Will Stand for.

Seven miles an hour is as fast a gait as the placid denizens of the Quaker City will "stand for." This space devouring pace applies to all vehicles except trolley cars. With fear and trembling it was decided to permit these to run nine miles an hour, it being thought that even a Philadelphian will not object to such a breakneck speed where they are concerned if he is in the car.

The matter came up on Friday last, when the law committee of the Philadelphia City Councils gave a public hearing on the pending ordinance to regulate all traffic on the city's highways. There were present representatives of the Road Drivers' Association, the Carriage Manufacturers' Association, Livery Stable Keepers' Association, the Rapid Transit Company and the Philadelphia Automobile Club.

The speed section of the proposed ordinance reads:

"No streetcars shall be run upon any portion of the streets or highways within the section bounded by Erie avenue, Snyder avenue and the Delaware and Schuylkill rivers, between the hours of 6 a. m. and 12 p. m., faster than an average of nine miles an hour, and in the district outside of said section no faster than an average of twelve miles an hour, and no vehicle shall proceed faster than ten miles an hour within the limits of the city of Philadelphia."

The part relating to vehicles was amended to read seven miles, and the words, "an average of," were struck out of the speed provision for streetcars.

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CASE NOT REOPENED

Motion in Automobile Interference Suit Refused —Roberts Defeats Bachelle.

The interference case of Roberts vs. Bachelle, which has been pending in the Patent Office for some months, has finally been decided by the Commissioner in favor of the former.

The case involved an automobile covered by C. E. Roberts's application No. 30,238, November 17, 1900, and O. V. Bachelle's patent No. 659,012, October 2 of the same year. The matter of priority having been decided in Roberts's favor, Bachelle appealed for a reopening of the case, and it is this appeal that has just been denied.

In his decision the Commissioner of Patents says:

"It appears that during the taking of Bachelle's testimony a certain exhibit consisting of some pencil sketches was introduced on behalf of Bachelle. Bachelle testified that said sketches had been made by one Hopkins, who is one of Bachelle's attorneys. Hopkins was present at the taking of this testimony, but did not corroborate Bachelle, because he (Hopkins) did not at the time regard the point as material. Bachelle is of the opinion that the examiner of interferences in his decision has made the point a material one, and therefore wishes to have the case reopened to introduce the testimony of Hopkins in corroboration of his (Bachelle's) testimony as to the making of the sketches.

"It thus appears that the evidence now sought to be introduced is not newly discovered, but was within the knowledge of both Bachelle and his attorney at the time testimony was first taken, and the sole reason for not introducing it before was because Bachelle's attorney did not regard it as material. In other words, it was purely an error of judgment on the part of Bachelle's attorney as to the weight or effect of the evidence in question.

"To allow the case to be reopened to admit further testimony would have the effect of granting a rehearing, and it is a well established rule in the office that a rehearing will not be granted in an interference case in the absence of such a showing as would entitle the moving party to a new trial in a trial at law.

"It is a rule of practice that ignorance, inadvertence or mistake on the part of a party or his counsel is no ground for a new trial. (Dod v. Cobb, 10 O. G., 462.)

"After a case has gone to final hearing it is an injustice to the office, as well as to the victorious party, to reopen the case and give it entirely new consideration merely because the defeated party has failed to realize that facts which were at all times within his possession were material to a determination of the case. If cases were reopened for such reasons as are herein presented decisions would be lacking in stability.

"In the case of Estes vs. Gause (88 O. G., 1,336), which in some respects resembled the one at bar, the following language is used:

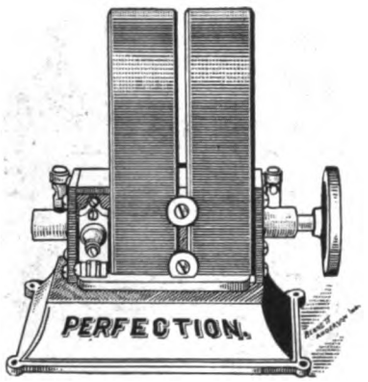
"'The only apparent excuse for his failure to introduce it at that time is that he did not realize its importance. While this is unfortunate for Estes, it is clearly no valid excuse, since a similar allegation could be made by every defeated party who wishes to strengthen his case. To reopen interferences upon such allegations would make it impossible to bring any case to a conclusion.'

"In the more recent case of McCallum vs. Bremer (93 O. G., 1,917) it was stated that where a party through overconfidence 'failed to present the full strength of his proofs' it was not a valid ground for reopening the case.

"It is held that Bachelle has not made out a sufficient showing to entitle him to a reopening of the case, and the decision of the examiner of interferences is affirmed."

Another Magneto From Anderson.

The Perfection magneto, made by the Perfection Magneto Co., Anderson, Ind., is put forth as a practical machine, with the parts designed with a view of making them perform the work for which they were intended.



The device occupies a space eight inches long, six inches wide and eight inches high, on a metal spring base. The bearings are hard brass, and three times as long as the diameter of shaft. They are all duplicates, can be replaced at any time, are drilled and tapped for either wick oilers, grease cups or ordinary covered oil cups.

The armatures are wound either wipe or jump spark. The armoture shaft is of crescent drill rod. The commutator is hardened copper, made on an iron core, well insulated with fibre and mica, forced on the steel shaft, and the commutator and shaft journals turned at one time and perfectly true and balanced.

Sprinkles Streets and Puts out Fires.

Charles W. Collyer, of Lynn, has been granted a patent for an automobile street sprinkling machine, which can at will be converted into a serviceable fire engine. The motive power is a gasolene engine, and water is applied by means of compressed air. One man can operate the whole machine, and great economy is claimed.

STORAGE RATES TOO LOW

Rents too Excessive to Permit Profits at Present Rates—Increase Made.

Concerning the remark of a dealer quoted in the Motor World last week to the effect that the storage business per se is not profitable, Mr. Adams, of the Central Automobile Company, at 1,684 Broadway, New York, where is to be found the most extensive garage in the city, was appealed to and asked if he could not tell the other side of the story. He replied:

"No, I cannot. There is more truth than poetry in the statement. If it was not for our sales of Plugeot, Mors and Cottereau machines there would be not money here for us."

"Why don't we raise our price? We have. We raised them the first of October. We are waiting for the other concerns to meet us now. The average storage rate? Oh, I couldn't say. There are some who will do business on any terms. We do not take in anything for less than $20 a month. We believe we have the best equipped garage in the city and give the best service and we cater to the best class of trade.

"New lines for next year? Well our Mr. Kimball is in Paris now looking about to see what there is. We expect to hear from him in a week. I understand from a friend who has just returned from France that there is a new model Mors, an 18-24, that is a marvel, almost absolutely noiseless and greatly simplified. The Peugeot car has been a great one this year. It has given as much satisfaction as any. The Peugeot has been running all the season, when other foreign machines have not. I understand they also have something new for 1903.

"Take on any new American lines? No, we will stick to imported machines in what we add to our list.

"Boarders lively? Very much so. Our carscars are in and out all the time. Of course on a day like last Friday there are not many taken out, but Friday night was a great one for electric broughams, I can tell you. Horses couldn't stand up, and that was where the automobile had its inning. Every brougham in our place was out that night."

Sue City for $85,000 Damages.

Suit has been brought against the city of New York by Frederick C. Havemeyer, Frederick Terry, jr., Julian N. Girard and Edmund Fremont for $85,000 damages. On Election Night an automobile containing the complainants and others plunged into an excavation in Hoffman Boulevard, near Long Island City. As a result Fremont's leg was so badly crushed that it had to be amputated. Terry's right leg was broken and Girard suffered severe sprains and bruises.

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AUTOMOBILE HORNS

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Prescott Steam Carriages
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Look before you buy. See report of New York-Boston Run.
AGENTS ASSIGNED IN UNOCCUPIED TERRITORY.
PRESCOTT AUTOMOBILE MFG. CO.,
83 Chambers Street, New York.

Better Not..



have any ignition outfit than to have a poor one.
WE MANUFACTURE NOTHING BUT THE BEST.
WRITE FOR CATAOGUE.
AMERICAN COIL COMPANY
W. SOMERVILLE, MASS.

For the Handling of Baggage.

"There are many uses to which motor vehicles could be advantageously put. One of them suggested itself to me the other day, and I really think it would pay some enterprising concerns to look into it," remarked an autoist to the Motor World man the other day.

"While over at the Jersey City station of the Pennsylvania Railroad I got to thinking about the baggage transportation methods that have been employed there for so many years. You may know that they have a lot of huge trucks on which the trunks, bags, etc., are piled high up in the air. These trucks are drawn by horses. They are run alongside the baggags cars of incoming and outgoing trains, loaded or unloaded, as the case may be, and then taken to the baggage room, which is located underneath the main floor, or to the ferryboats.

"The haul is quite a long one, and the loads heavy enough to tax the stout horses that draw them. Now, what a stroke of genius it would be to substitute motor trucks for these equine drawn ones!

"Think of the improvement they would be. All of the disadvantages arising from the use of horses in a confined space, the sanitary difficulties, all would disappear, and increased efficiency take their place.

It is well to have a strainer in every funnel used for filling a tank with gasolene. Such a thing has been known as a carburetter getting choked because of foreign matter in the gasolene. It may not happen to a man in two years, but if it should happen on a cold, drizzly night, he would give the price of a gross of funnels with strainers in them to be out of the trouble.

Pressure gasolene feeds and circulating water pumps are condemned by M. S. Napier, head of the English firm of that name.



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80 per cent. more efficiency than any other.
Standard Everywhere.
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ARE ALWAYS RELIABLE

Diamond Chains were fitted to 14 of the 16 vehicles which won First-Class Certificates in the New York-Boston 500-mile reliability contest.

The makers of the WINTON have decided to equip ALL THEIR CARS with Diamond Chains.

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DIAMOND CHAIN FACTORY — Indianapolis



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The Week's Patents.

714,799. Gas Engine. Joseph Hirst, New London, Conn. Filed October 19, 1901. Serial No. 79,266. (No model.)

Claim.—In a gas engine, the combination of a driven shaft, a water-jacketed casing, parallel cylinders therein, pistons in said cylinders and all disposed in a line transverse to the axial centre of said shaft, a housing, a gear on said shaft within the housing, a wheel on the extended end of the shaft, gears within the housing all meshing with the gear on the shaft and all disposed above the horizontal axial centre of the shaft and mounted on studs journaled in bosses on said housing, shafts in axial line with said studs and also journaled in said housing, crank-disks on the ends of said shafts, a crank-pin on each disk, connecting each disk to the confronting gear, and a rod connecting each piston with a crank-pin and disposed between the crank-disk and gear, all substantially as shown and described.

714,808. Vehicle Frame. Hermann Lemp, Lynn, Mass., assignor to Elihu Thomson, Swampscott, Mass. Filed May 18, 1899. Serial No. 717,265. (No model.)

Claim.—1. In a vehicle, the combination of a pair of axles, a frame, springs between the frame and the axle for supporting the frame, a battery frame below the main frame, and a mechanical connection other than one of the springs between the battery frame and one of the axles, which is capable of universal movement.

714,878. Steering Mechanism for Vehicles. James F. Duryea, Springfield, Mass. Filed May 10, 1900. Serial No. 16,241. (No model.)

Claim.—1. A vehicle having on its body a motor-driven shaft, a clutch-engaged gear-wheel to be driven by said motor-shaft, and a depending shaft-section, the axle for the forward wheels arranged under said depending shaft-section and a gear-wheel in driving connection with the axle having a rising shaft-section, means of engagement between said shaft-sections whereby they rotate in unison, but may have contracted and distended relations, journal-sleeves surrounding said axles, having upward extensions b4 b4, and supporting the springs, a part, D, supported by said springs having the pedestals depending over and embracing said journal-sleeve extensions, and on which part D, the forward part of vehicle body, rests, and between which said part and body there is relatively a swiveling movement and means provided and actuated on the body, and operating on the said part D, for turning same, substantially as described.

714,902. Means for Starting Explosion-Motors. John W. Hinchley, London, England. Filed June 20, 1901. Serial No. 65,315. (No model.)

Claim.—1. Means for starting explosion-motors, comprising a valve-casing, two seats opposite one another formed therein, ports beyond the valve-seats leading to the atmosphere, a plug-valve to open and close communication between the casing and explosion-chamber of the engine, a valve having two faces and located between the seats, a piston connected to said valve and springs acting on the piston to successively take up different pressures on the valve, for the purpose set forth.

714,982. Generator or Mixing Valve. Frank B. Widmayer, Michael E. Toepel and Adolph Potdevin, New York, N. Y. Filed May 9, 1901. Serial No. 59,379. (No model.)

Claim—1. In a generator or mixing valve, the combination of an oil-valve and a main admission-valve positively engaged or connected therewith in its closing movement, but capable of movement independently thereof in its reverse or opening movement.

715,008. Steam Explosive-Engine. Charles A. Braden, Butler, Pa., assignor to the Braden Gas Engine Company, a corporation of West Virginia. Filed October 19, 1898. Serial No. 694,035. (No model.)

Claim.—1. The combination with a gas-engine cylinder having a piston working therein, of a head forming one end of said cylinder with the piston-rod working therethrough, and a steam-engine cylinder connected to said head in horizontal alignment with the gas-engine cylinder, the head forming one end of the steam-engine cylinder, and the piston-rod being common to both the gas-engine cylinder and the steam-engine cylinder, substantially as described.

715,027. Storm-Apron. John C. Crimins, Indianapolis, Ind. Filed September 15, 1902. Serial No. 123,452. (No model.)

Claim.—1. A storm-apron adapted to envelop the upper part of the body of an occupant of a vehicle provided with a neck opening to enable the apron to be placed about the neck of the wearer, a collar-strip along the edge of said opening, means for closing the lower part of the neck opening, and a flap secured to one side of the upper portion of the collar strip and adapted to cover and close the upper portion of the neck opening.

715,150. Valve-Gear for Explosive-Engines. William J. Robb, Portadown, Ireland. Filed January 2, 1902. Serial No. 88,160. (No model.)

Claim.—1. In an internal-combustion engine the combination of a working cylinder, a combustion-space within the cylinder, an end plate secured to the combustion end of the cylinder, a lug on the face of the end plate outside the cylinder, a passageway through the lug approximately parallel with the face of the end plate, means for closing the outer ends of this passage, means of communication between one end of this passageway and the combustion-space of the cylinder, a valve to control this means of communication, means for operating the valve, a second passageway through the lug approximately at right angles to the first and in approximately the same plane and passing through the first passageway remote from the cylinder-valve end, means for closing both ends of this passage, an exhaust-port communicating with this passage, an inlet port communicating with this passage, a valve to control these ports and means for operating that valve as set forth.

715,196. Sparking Igniter for Explosive-Engines. Chauncey C. Chamberlain, Ionia, Mich. Filed December 12, 1901. Serial No. 85,661. (Model.)

Claim.—1. In a sparking device for explosive-engines, the combination with the boss within the igniting-chamber, of a fixed electrode-shaft extending therethrough and suitably insulated therefrom and provided with a sparking-point, a movable electrode-shaft extending therethrough and provided at the inner end with an arm and a sparking-point, a rock-arm having an extended sleeve portion formed at a right angle thereto and made smaller to form a shoulder therewith, and mounted loosely on the movable electrode-shaft, a coil-spring loosely mounted on the sleeve portion of the rock-arm, one end of which is secured to a cap on the extreme outer end portion of the movable electrode-shaft and the other to the rock-arm at its inner, shaft end portion, an electrode-controlling collar having an elliptical portion mounted on and fixedly secured to the movable electrode-shaft, immediately below, and adjacent to said rock-arm, and having its outer and upper free end portion abutting the same, and an angular tension-spring, the upper perpendicular portion of which bears against the elliptical portion of said electrode-controlling collar, having its lower horizontal portion secured to the supporting plate which is removably mounted on the igniting-chamber of the engine, a stop secured in the upper portion of said supporting-plate adapted to limit the movements of the rock-arm and electrode-controlling collar in combination with an automatic releasing mechanism consisting of an actuating-bar having an angular-shaped slot formed therein at its outer free end portion, and a bearing formed therewith, an actuating-hook loosely mounted therein having its free outer end portion bevelled and concavely formed, a pin extending through it and the forked portions of said actuating-arm, a lug formed thereon at its opposite point of contact, angular looped spring secured to the upper surface of the actuating-bar at its outer free end portion, adapted to engage the lug on the actuating-hook, a reciprocating lever, one end of which is mounted on the outer end of the arm formed with the supporting-plate and the other to the actuating-bar which carries it forward and backward by means substantially as described.

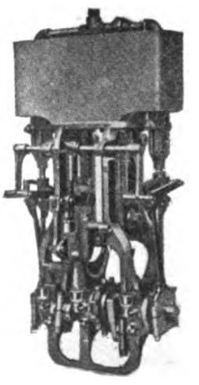
TRADE MARK.

39,405. Automobiles. Olds Motor Works, Detroit and Lansing, Mich. Filed November 6, 1902.

The word "Oldsmobile." Used since December, 1900.



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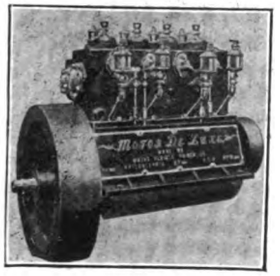
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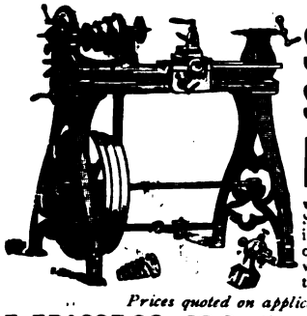


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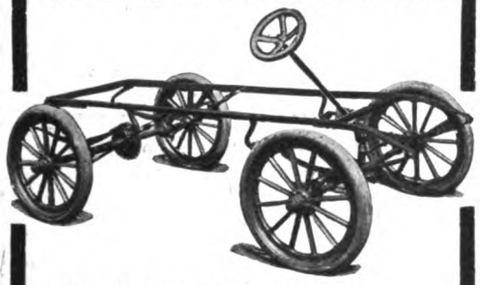
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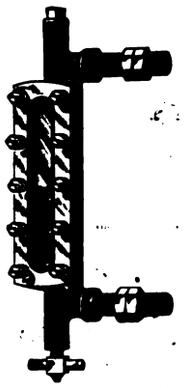
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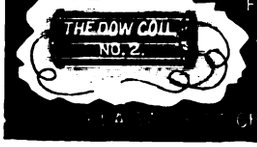


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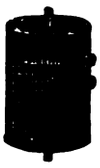
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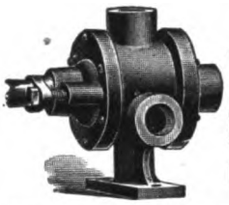
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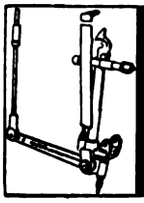
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It has new and elastic spring suspension, new body design with high-back seats and luxurious deep spring upholstery, three passenger tonneau, divided front seat, improved ignition and many other superior features.

Complete with full brass side lamps, tools, horn, etc. The price is $2500. It will be in evidence at the New York, Cleveland, and Chicago Automobile shows.

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Berea Road, CLEVELAND, OHIO.

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The AUTOCAR



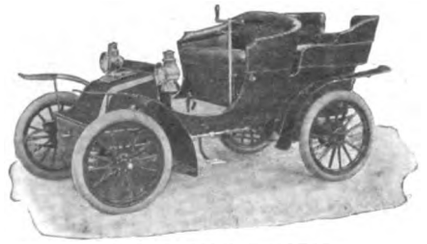
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WASHINGTON, D. C.	NATIONAL CAP. AUTO. CO.	1124 Connecticut Ave.
PITTSBURG, PA.	BANKER BROS. CO.	Baum and Beatty Sts.
CHICAGO, Ill.	F. P. ILLSLEY	284 Wabash Ave.
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LOS ANGELES, CAL.	HEINEMAN & PRATT	705 Main St.



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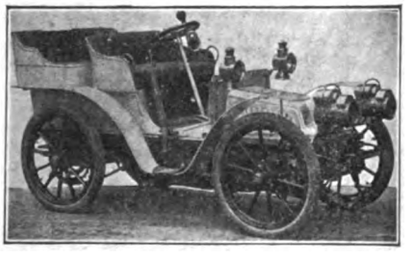
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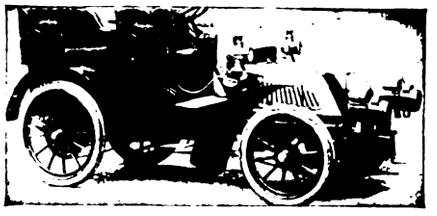
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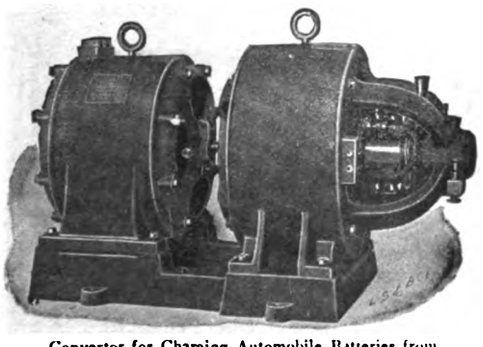
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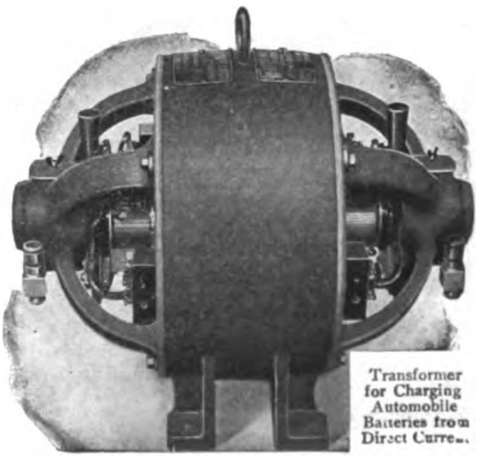
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THAT ARE NOW USED ON ALL THE MOST SUCCESSFUL ELECTRIC AUTOMOBILES in the country.

Our machine is the **MOST EFFICIENT and PRACTICAL OF THEM ALL**—as demonstrated by hundreds of them in daily use all over the country.



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THE ELWELL-PARKER ELECTRIC CO.,
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GOODRICH
Clincher Double Tube Automobile Tires



will be the regular equipment on more Touring Cars in 1903 than all other makes of motor tires combined. Such a showing is reasonable proof that the use of Goodrich Clincher Automobile Tires will add to the good name of your machine and greatly lessen the tire troubles that you may have experienced heretofore.

ALL REPAIR OR ADJUSTMENTS MADE AT THE FOLLOWING BRANCHES, WHICH CARRY A FULL AND COMPLETE LINE OF STANDARD SIZES OF TIRES AND PARTS CONSTANTLY ON HAND.

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Like Finding Money

Figure it out for yourself.
Did you ever see a car at anywhere near the price that compares with it?
Look it over.

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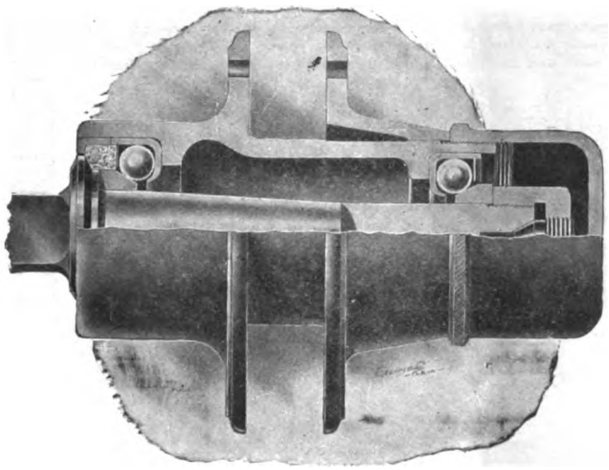
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WM. E. METZGER, Sales Manager. **DETROIT, MICHIGAN.**

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We are now prepared to furnish these Hubs, Ball-Bearing and Key-Seated, for Automobiles weighing from 500 to 4,000 pounds.

Front Hubs are Ball-Bearing and are assembled on our well-known Steering Axles.

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ALL RACES ARE GROUND IN POSITION IN HUBS. CONES AND CONE SEATS ON SPINDLES ARE GROUND TO GAUGE.

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In which each week appears a record of all that is best, brightest and newest in the world of mechanical traffic.

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ESTABLISHED 1884.

Weston-Mott Company,
MANUFACTURERS OF EVERY DESCRIPTION OF
STEEL WIRE WHEELS.

Utica, N.Y. 10/10/02.

The Goodman Co.,
New York City.

Gentlemen:

With regard to advertising in the Motor World, would say that the strongest endorsement any advertiser can give a medium is by continuing to use its columns.

We were among the very first advertisers in the Motor World when it was started. We believe at that time there were not more than half a dozen others at the outside.

We have continued with the paper regularly ever since, and so long as the paper remains as at present we undoubtedly will continue to be in it.

We advertise in the World because we know that it appeals to a certain class of the automobile industry that none of the other trade papers do, as well as covering the entire field, of course.

Yours truly,
Weston-Mott Co.

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All Roads Alike and all Seasons the Same to

The Oldsmobile

This useful and handsome machine is the pioneer Runabout of America and while its success and popularity has caused it to be widely imitated the Oldsmobile still maintains its position as "The Best Thing on Wheels."

1903 Improvements

make the Oldsmobile simpler and stronger than ever. Its sterling merit is testified to by 5000 satisfied users.

The best known automobile in America—the cheapest reliable machine in the world.

PRICE $650.00 AT FACTORY.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, December 18, 1902. No. 12

WHYS AND WHEREFORES

Of Stops Made in Reliability Contest—Elaborate Report is Submitted.

At last, after many weeks of weary waiting, the book containing the complete record of every car that started in the Reliability Run of the Automobile Club of America from New York to Boston and return, Oct. 9-15, is at hand. Looking it over one ceases to wonder that it took a long time to prepare, and concludes that the publication was worth waiting for. It is very thorough and full of interest. Every car is recorded on a page or pages of its own, even those that dropped out. The make, entrant, horsepower, weight, tires, number of passengers, style of engine and average speed per hour of each is given, together with all the stops, the cause and duration of them, the repairs and adjustments at controls, the marks lost and the reason for them.

In the following summary the most important part of the record of the cars that finished the run is given. In explanation it may be said that the report as given in the book has been abbreviated as much as possible. After the number and name of the machine comes the rated horsepower, and then an initial capital letter denoting the power, "G." for gasolene and "S." for steam; next the weight and the total number of marks accredited at the finish. The perfect number of marks, it will be remembered, was 2,092. The number of stops, both penalized and unpenalized, have been given in the aggregate, and the total time lost by them immediately follows the number. Next to the time lost by stops is given the causes of them, and after that the tinkerings at controls (not penalized), as reported by the observers. Finally the marks lost through being late or early at controls or missing them are given. Where no non-penalized stops, or control repairs, or marks lost at controls are mentioned, there were none, and it is interesting to note that several machines went through not only without a stop, but also without being touched while in a control. In this summary, the tire troubles, which are grouped separately in the book, are run along under the head of non-penalized stops and control repairs, but as they invariably have been placed at the end of the list under those headings, a little study will reveal which machines suffered most in this way and what a noteworthy number got through without any tire troubles. In consequence of making a sum total of

(Continued on page 360.)

Hildebrand to Sell Stevens-Duryeas.

C. C. Hildebrand has been appointed General Sales Manager of the automobile department of the J. Stevens Arms and Tool Co., Chicopee Falls, Mass. Hildebrand is a comparatively recent acquisition to the automobile trade, he having been appointed manager of the New York branch of the International Motor Car Co. less than a year ago. He has a reputation for making a conspicuous success of anything he undertakes, and his new position will give him the scope he has heretofore lacked.

Receivers for Taunton Concern.

An assignment to Daniel L. Brownell was made on Saturday by the Taunton Automobile Works, Taunton, Mass. No statement of the assets or liabilities has been given out. The concern was organized in 1901. Its operations have been of a local character.

Death of Conrad Co.'s President.

In California week before last, after an illness of considerable duration, S. L. Fisher, president of the Conrad Motor Carriage Co., of Buffalo, N. Y., died of consumption. The body was taken to Cincinnati, Ohio, for burial.

Chain Makers Congregate in Cleveland.

The report that there is something brewing in the chain line was given added color by the simultaneous appearance in Cleveland last Thursday of a number of the principal chainmakers.

Banker Bros. Co., Pittsburg, have just increased their capital stock from $50,000 to $100,000, all paid in.

CHALLENGE IS FORWARDED

America Elects to Contest for the Bennett Cup—Winton One of Team.

Commendable promptness has been shown by the automobilists of this country in responding to the decision of the Automobile Club of America to compete for the Bennett International Cup. Within three days from the time when the club declared itself a competitor the necessary complement of three contestants had applied for the privilege of representing the club and had posted the money necessary to obtain recognition.

The three who have announced themselves are Alex. Winton, Cleveland; L. P. Mooers, Cleveland, and H. S. Harkness, New York. Two others—Percy Owen, New York, and C. W. Matheson, Grand Rapids—have signified their intention of applying for the honor.

On last Friday night the race committee of the club had a meeting and decided to formally accept the application of Alexander Winton and to nominate him as one of the entrants to represent the club in the cup race. It is understood that this positive action was taken because Mr. Winton, who at that time was the only one who had filed an application and posted his forfeit, was the first one to come forward in a way sufficiently definite to enable the club to act, and also in consideration of the fact that he is the holder of the best recognized records made by an American machine.

In view of the probability of there being half a dozen or more candidates for the team of three, the race committee of the club has under consideration a plan to select the two remaining cars by means of trial races to be run here, following the same idea used in selecting yachts to defend the America's Cup.

The following statement and set of rules were issued by the race committee after its meeting:

The Automobile Club of America has accepted and nominated one entry for the Gordon-Bennett Cup Race. They are open

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to receive further entries for that race (from which two will be nominated) upon the following conditions:

1st. Each entrant shall deposit with this club the sum of six hundred dollars.

2d. The racing committee of this club shall decide which of the entrants not yet accepted may compete in the cup race. This decision may be arrived at by a contest, or by the committee without a contest.

3d. Any entrant who is not nominated by the racing committee for the cup race shall have his entrance fee returned to him.

4th. Any entrant who, after being nominated for the cup race by the committee does not start, shall forfeit his entrance fee of six hundred dollars.

5th. If three entrants are nominated to take part in the cup race, each entrant shall have two-thirds of his entrance fee (after deducting his proportion of the expenses incurred in holding the race) returned to him, provided he starts in the race.

6th. If two entrants only are nominated, each of such entrants shall have one-half of his entrance fee (after deducting his proportion of the expenses incurred in holding the race) returned to him, provided he starts in the race.

7th. These rules are supplemental to the rules of the Gordon-Bennett Cup Race, by which each entrant agrees to abide.

The machine of Alex. Winton will, of course, be a Winton, not the "Bullet" or "Pup," but a special car that will be built. A special Peerless will be built for L. P. Mooers, but the details concerning it are not forthcoming yet. The plans of H. S. Harkness are shrouded in mystery. When asked by a Motor World man what car he would drive Mr. Harkness laughed and replied that it was a secret. He said it was not a Peerless, as had been rumored, but a car being especially built for him. What make it will be or what its horsepower he said he would not reveal before April, for the reason that if his first machine should not prove satisfactory he might want to give an order to some other maker, and it was wise to avoid the possibility of injuring any one by letting it be known that one of its machines was a failure. He said frankly that his car would not be either a Peerless or a Winton, but admitted that it would be turned out by an established factory. That his car will be of about 50 horsepower might be inferred from the fact that in discussing the proposed Matheson machine, Mr. Harkness expressed a very positive opinion that a car developing 150 horsepower would not be practicable. "It will tear itself to pieces, like those 70 horsepower Panhards on the other side," he said. "Fifty horsepower is enough."

The Matheson car is to be the product of the recently formed Matheson Motor Car Co., of Grand Rapids. It is said that it will have four 8 by 10 cylinders and develop 150 horsepower. It is understood that two such machines will be built, and that J. B. Hedges will be a candidate for selection by the committee in the second one.

GRANDER THAN EVER

Paris Show Magnificent and Thronged With Spectators—Changes and Improvements.

Opened on Wednesday of last week in a blaze of splendor, with an enormous list of exhibitors, the fifth annual Paris automobile show is now half over. As was foreshadowed, no startling novelties, no radical departures from the conventional, were to be seen. Judging by the rather fantastic cable reports, such cars as the Mors, the Panhard, the C. G. & V. and the Renault, among gasolene cars, and the Serpollet among the steamers, occupied the centre of the stage. They have all undergone changes of a minor character. Noiselessness, simplification of transmission gears—one car being shown with but two speeds, one for starting and the other for ordinary runnings—the Germanification, or Daimleration, of radiating devices, mechanically operated intake valves, weight reduction—these can be extracted from the hodgepodge of matter cabled by so-called experts.

The popularity of the event was sufficiently shown by the immense crowd that visited the palais from about 3 o'clock of the opening day until the closing hour. The wide alleys separating the rows of stands, and the stands themselves, were packed so densely that an inspection of the machines exhibited was a difficulty, and progress, save at a snail's pace, was an absolute impossibility.

The most interesting exhibit at the Panhard stall was a new 35 horsepower machine, which cannot be delivered for two years. Its salient features are four separate cylinders, to prevent heating up and to facilitate repairs; a new auto-dynamo, arranged on the same shaft with the pump of a Daimler, combining the system with a fan behind the engine, and an entirely new gas and spark combine on the wheel. Many of these points will be found on the cars of earlier delivery—for instance, a new 8 horsepower machine, which will have three cylinders and will be delivered in March.

In the Panhard exhibit is a regular gasolene engine which drives a large dynamo. Power is supplied to the electric motors for the front wheels like the Kreiger system, so popular in Paris. This machine is nothing more than an electric car which manufactures its own electricity.

Special interest is taken in the new Serpollet 40 horsepower racing Chassis, which is characterized by various changes and improvements, leading to greater simplicity in case of power and diminution of weight. The results achieved with regard to this latter detail may be imagined from the fact that the new 40 horsepower model weighs very little more than an old 6 horsepower machine. The latter type weighed about 700 kilogrammes; the new 40 weighs 850 kilogrammes.

Another most important change has been made in the generator, the vital organ of steam machines. The special form and disposition of the generator in this new model secures for it great increase of strength, diminution of weight and about double the heating surface that was available before. This means a larger supply of wholly "dry" or superheated steam, with lessened consumption of petroleum for heating.

A new pneumatic tire which is supposed to diminish the chances of that awful bugbear of automobiling known as "skidding" was shown. It has a flat surface, about two inches wide, on an envelope of tire. Whether or not this will prevent skidding remains to be seen, but several experts declared that it will in all probability decrease the speed of any automobile using it.

Herr Maybach, of the Daimler Co., was interviewed on the future outlook. "I do not think that any radical change in the essential features of the automobile is likely to be made in the immediate future," he said. "The general principle of the engine will remain unmodified. In all probability the same remark applies to the gear. Of course, the improvement and the perfection of the details are certain.

"The Mercedes model of 1903, for example, contains many important modifications. The cooler is of an absolutely new type, and weighs 30 per cent less than the one now used in the Mercedes, while presenting a cooling surface about 40 per cent greater.

"The gear case is quite new. There is only one lever, and changes of speed are effected without noise. The motor, too, has been altered very materially, with the result that there is a notable diminution in oil and essence consumption, with consequent lessening of running expenses. There is not the slightest smell when the machine is going slowly. The motor can run very slowly in every speed, from 400 to 1,200 revolutions a minute. But these modifications only come under the head of improvements in and perfecting of the details."

Fournier Equals Kilometer Record.

On Thursday of last week, in spite of the government interdiction of the Dourdan road, Henry Fournier made a trial for the kilometre record. He succeeded in equalling the time of M. Angures, the record holder—29 seconds.

Automobile Club's Annual Banquet.

The date for the annual dinner of the Automobile Club of America has been set for January 24. It will be held at the Waldorf-Astoria, as usual, and invitations will be sent to a list of distinguished speakers.

Quakers in New Quarters.

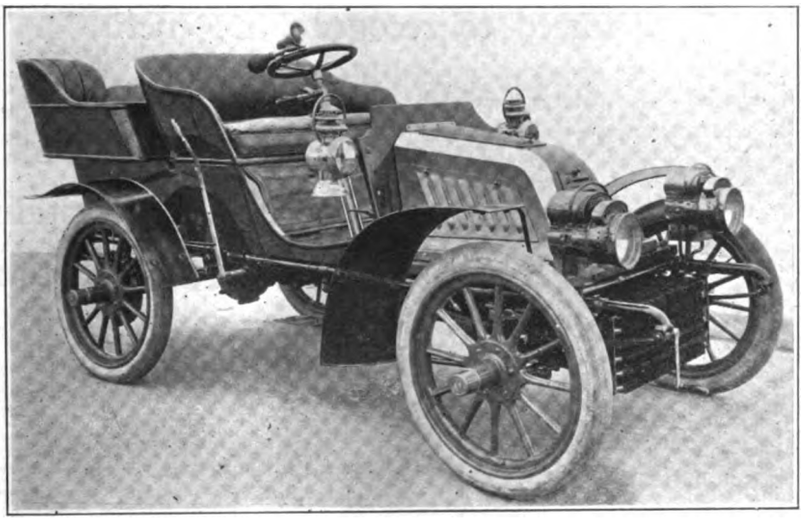
Rooms in the Penn Square Building have been secured by the Automobile Club of Philadelphia, and a formal opening and smoker will take place on Friday.

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PRODUCED BY PIERCE

One New and One Improved Model Brought out by Buffalo Firm.

From the famous little Pierce Motorette comes the natural development of a larger, more powerful and improved 1903 model, and in addition an entirely new Pierce light touring car that incorporates in its constructional features points that seem sure to appeal to the buying public. Both are the product of the George N. Pierce Co., Buffalo, N. Y.



LIGHT TOURING CAR.

Chief among them is the admirable arrangement of the accelerating and retarding speed devices. All of the former are under the hand, while the latter are all under the foot. This in itself is a long step forward in the right direction, greatly aiding the much to be desired "simplicity of control." By this means confidence, that all important factor in the novice, is begotten at the start.

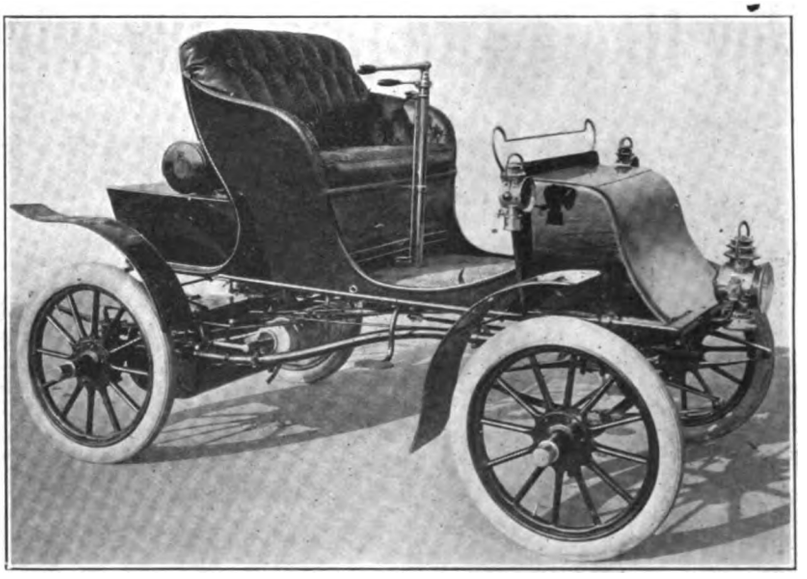
In appearance the car, which is shown here for the first time, is very attractive. The body lines are all on the same rake or degree. This, in addition to making a symmetrical whole, has the added practical value of giving greater water-carrying space, the added slant of the back of the bonnet enabling a larger tank to be carried.

Power is furnished by a 16 h. p., 2-cylinder upright De Dion motor, having direct drive and giving three speeds forward and a reverse. All speed changes are made with the lever below steering wheel, thus doing away with side levers.

The car is 81 inches wheel base between centres, is of standard gauge and weighs 1,500 pounds. Pierce quality of construction marks it throughout, which is equivalent to saying it is of the best.

The new Motorette is a worthy companion to the touring car, and the logical successor of the little car which made such a name for itself in 1901 and 1902. It is a bigger and better car, and one that has no superior in its field. It is equipped with a 6 horsepower De Dion type of motor that furnishes ample power. The wheel base is longer, the body roomier and more comfortable, and it has artillery wheels. Altogether the car has been wonderfully improved.

The same accessibility and simplicity that characterize the present model are, of course, retained and improved wherever possible. Both the Touring car and the Motorette will be shown at New York.



NEW "MOTORETTE."

Employee Sues Eisenhuth.

Property of the Eisenhuth Horseless Vehicle Co., Middletown, Conn., has been attached in the interests of Henry Metzger, a former employe of the company, who has brought suit claiming $10,000 damages by reason of injuries received while in the employ of the defendant company.

CLEVELAND'S CLAIMS

Her Prominence as a Manufacturing Center Warrants Holding a Show There.

A clear, concise and well printed little booklet has been issued by the promoters of the Cleveland (O.) Automobile Show, which will be held at the Cleveland Grays' Armory the week of February 9.

To the question why Cleveland should have an automobile show these are some of the answers returned:

Because Cleveland is the hub of the automobiling manufacturing industry in America.

It has no less than thirty manufactories, and among this number are the largest and most representative in the country.

There are more automobiles in use upon the streets of Cleveland, in proportion to population, than in any other American city.

George Collister, No. 317 Superior street, Cleveland, O., is the show secretary.

Reduced Railroad Fares to Chicago.

The Central Passenger Association, which embraces practically all of the territory in Illinois, Indiana, Ohio, Michigan and all points east to Pittsburg and Buffalo, has granted a rate of a fare and a third on the certificate plan for the Good Roads Convention of the National Association of Automobile Manufacturers, to be held at the Coliseum during the Chicago show, February 14-21, 1903. An application for a similar concession has been made to the Western Passenger Association and to the Eastern Associations. It is quite likely that the rate will be offered from all parts of the United States. The convention will be held in the hall on the second floor of the Coliseum Annex.

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"THAT NORTHERN IS A FINE CAR"



is an expression that is frequently heard. Even competing dealers are forced to recognize its merit.

Dealers who are handling the Northern are securing the bulk of discriminating trade in their section.

Its users make more customers —better get in line NOW.

NORTHERN MANUFACTURING CO., Detroit, Mich.

AGENTS: HOMAN & SCHULZ, 100th St. and Broadway, also 38th St. and Broadway, New York, N. Y. ALVAN T. FULLER, 243 Columbus Ave., Boston, Mass.
P. DESMARAIS & CO., Bristol, Conn. BANKER BROTHERS COMPANY, Philadelphia, Pa. R. V. CONNERAT, Savannah, Ga.
OHIO MOTOR CAR CO, 317 Huron St., Cleveland, Ohio. NATIONAL AUTOMOBILE & MANUFACTURERS CO., 26 Fremont St., San Francisco, Cal.

Why Use a Tire Originally Intended for a Bicycle?

THE DOUBLE TUBE

Fisk Detachable Vehicle Tire



IS THE RESULT OF AUTOMOBILE EXPERIENCE AND MEETS EVERY DEMAND.

Fisk Rubber Company,

Write for Catalogue "H." CHICOPEE FALLS, MASS.

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THE MOTOR WORLD
DEVOTED TO THE AUTOMOBILE
And Kindred Interests

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☞ Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceeding the date of publication.

☞ Those who are interested in motor vehicles will find the facilities and information of our office always at their command

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

CABLE ADDRESS, "MOTORWORLD," NEW YORK

Entered as second-class matter at the New York, N. Y, Post Office, November, 1900.

NEW YORK, DECEMBER 18, 1902.

Bennett Cup Race Pseliminaries.

With the formal announcement by the Automobile Co. of America of the rules under which its team sent to compete for the Bennett Cup will be selected, and the similar regulations of the British club—the French challengers having already made their plan public—the matter is pretty well outlined.

The German makers are the only formidable competitors left unrepresented, and as yet no indication has come of their intentions.

Mercedes cars would undoubtedly add much to the interest of the race if they should take part in it, and most sportsmen will welcome their entering the ring should they do so. But even without them a fine contest is pretty well assured. The French makers will undoubtedly strive fiercely to regain the trophy that was snatched from their unwilling hands so unexpectedly last summer, while their British rivals will be no whit behind them in striving to retain the cup and, by a second victory, uphold their claim to the possession of cars equal to the Continental ones.

As to our own representatives, it is useless to deny that they have a prodigiously difficult task before them.

Experience counts in automobile road racing, as in everything else. It took three trials before Edge, the Englishman, wiped out his defeats in victory. And to the former he frankly ascribed the latter, saying that the "know how" acquired by him was a direct consequence of unsuccessful attempts.

At the same time we shall, if defeated, have few excuses to make, and probably none on the score of improper or imperfect representation. In common with the other countries mentioned as having decided upon the method of team selection, no effort will be spared to select the best cars as well as men. That the two go together is wisely recognized, while at the same time undue prominence is withheld from either. The mistake made by the French organization last summer—that of putting its eggs all in one basket—will be avoided, and a team representative of the best makes selected.

In England some criticism is made of the selection of two cars of the same make, and this without a competitive trial and of the severity governing the preliminaries.

The trials themselves are to be exhaustive, as far as they can be on a mile course. To compete in them a maker must pay $250 toward their expenses, and deposit $2,500 should he secure a place on the team. In themselves these should effectually bar out concerns in search of advertising.

Of the American team one member has been nominated. The other two may be selected with or without a trial. The latter will probably be resorted to only in case there are more than two applicants for the position. The Automobile Club of America has protected itself by requiring a deposit of $600, and this will undoubtedly serve the purpose.

Altogether the 1903 running of this historic race, which was designed to promote the production of cars manufactured wholly in the country in which they originated, only such cars being permitted to compete, bids fair to be the most important and successful as well as the most thoroughly international of all that have taken place.

Apropos of the course of the race, it has become evident that friction has arisen between the British and French clubs. The former made every effort to find a course that keeps within the strict letter of the rules, but without avail. Then a course that would do was found in Ireland, but the French club refuses to abate a jot or tittle of the letter of the cup rules; unmindful of the fact that in the last race it asked for the consent of the British club to make slight modifications, which request was acceded to. At present a practical deadlock exists, the only solution of which appears to be the selection of a Continental course, which is plainly the object sought.

Scores an Emphatic Success.

Success, with a great big S, only awaited the opening of the Paris show to claim it as its own.

Not even the great expectations formed of the annual exhibition availed to discount its attractions or to moderate the peans of exultation that have been raised as a result of the stupendous favor accorded what is universally admitted to be the "finest ever," even in Paris, that scene of gorgeous shows. An outpouring of interested sightseers was witnessed, and it went away satisfied with the magnificence of what was submitted to it for inspection and approval.

As to the lessons of the show, the real meaning of the many changes made, only the briefest summary is possible at this time. The extraction of the essence is being made, and in due course will be presented in these columns. At this time it can only be said that changes and improvements have been made, but none of them appear to be of a major character.

Some Comparative Figures.

How rapidly the automobile industry has grown is strikingly evidenced by figures compiled showing outputs during the past season of prominent concerns.

Only a year ago it was asserted by a European authority and nowhere denied that up to that time no single company had yet succeeded in turning out 1,000 complete cars. Not even the immense French factories were excepted from this sweeping characterization.

It is now stated that one concern—located in the country mentioned—produced during 1902 no less than 2,000 cars and 5,000 motors.

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If this is true there can be little doubt that others—probably several of them—exceeded the even thousand, the charmed figure which none had previously been able to go beyond.

In this country there is no matter of doubt that the thousand mark has been very greatly exceeded. One concern is credited with producing in the neighborhood of 5,000 vehicles this year, and while no one else approaches this, there is no question thaa the foreign figures of a year ago have been surpassed by more than one concern.

A year ago, too, it was a liberal estimate that placed the number of cars in use in this country at 5,000.

Now three times that number would probably be within bounds. And for 1903 even greater strides are likely to be made. We may dismiss with a smile the optimistic prediction of 40,000 cars. That is quite inconceivable, if for no other reason because of lack of factory capacity. But it is quite certain that the industry will again record a big increase, an increase that will, as it was this year, be general.

It was inevitable that with the passing of the experimental stage factory capacities should undergo a great expansion. The movement has only begun, of course, and as long as the demand keeps in excess of the production and repetition processes are more and more used it must make rapid progress.

Are the Prices of Parts Too High?

When a comparatively new industry is concerned it is only natural that inequalities, inconsistencies and even injustices should occasionally obtrude themselves and do their best, or worst, to cause trouble.

At the present time a case of the kind exists. The complaint is made by both dealers and users of automobiles—particularly the later—that list prices of parts are entirely too high—unreasonably so, in fact. It is just here that the line of cleavage will come. Makers will probably admit that prices are high, but they will deny that they are unreasonably so. And it will take a lot of convincing before either side is convinced that it is in error.

The matter is of no very great importance. Yet it can easily be viewed too lightly. The best proof of this is contained in the statement made to us that users are beginning to go to repair and machine shops to have some parts made, instead of buying them from the makers of their cars. We are assured on unexceptional authority that such is the case, and that matters are likely to get much worse before they get better.

It is, of course, obvious that it is not good policy that such a habit should be contracted, much less permitted to grow until it becomes a confirmed one.

No ont is so well equipped to make the parts for a car as the manufacturer of that car. He can not only make them better than any one else, but he can (even if he doesn't) sell them at a lower price than any one else. Furthermore, he always has a stock of them, and requisitions made upon it can be honored much more quickly than new parts can be made in any shop.

Even if this is acknowledged, however, it is very easy to retort that the best judge of the price of parts is the maker thereof. As soon permit the user, or the dealer, to set the price of the car as its component parts, the maker may say. Yield on one point and it would only be a question of time when it would have to be done on the other.

Perhaps it would. And perhaps parts are not priced any higher here than in other countries. But is is quite as bad a horn of the diemma to stand idly by while new parts are made by outsiders, to the loss of the maker of thec ar and possibly to the detriment of the latter. And dissatisfied customers are not a very good investment.

The matter is worth looking into, at any rate.

Speed Change Economy.

Very often the number of changes of the speed gear made by a driver gives an excellent line on the ability of the driver and the behavior of the car itself.

In a conversation last year, Henry Fournier stated to us that in the Paris-Berlin race he had driven the entire distance on his highest speed. Even through the towns, where a slow pace was necessitated, he controlled his pace by means of the throttle, thereby being able to widely vary it with extreme rapidity, as well as avoiding wear and tear, with its incident danger of accident, on the transmission parts.

This was an extreme case, but if a powerful and speedy racing car could be driven without recourse to gear changes it is obvious that ordinary vehicles can be much more easily manipulated, especially if they have a greater range than is furnished by the minimum equipment of two speeds.

If a car will run 25 miles an hour under normal conditions and owing to poor roads or a desire to travel leisurely it is possible or desirable to go only 12 or 15 miles, there is really no necessity for using the top speed gear. If it is used, some measures must be taken to check the speed by throttling, retarding the sparking or otherwise, the use of one neutralizing the high gear. A better plan is to use an intermediate gear, thus not only affording all the speed that is wanted, but preparing the car to take moderate hills faster and steep ones without having to shift to the slower gear.

Lack of flexibility is, of course, one of the glaring faults of the gasolene car, and to it is due the necessity for a number of speed changes. If they were not necessary they would not be provided, and being necessary they must all be used at one time or another. But the ideal way to drive is to use the different gears as little as possible, running on one speed just as much as the power of the motor and the character of the road will permit.

Each change means bother, some delay, and strains and wear and tear on the entire vehicle. The transmission parts suffer most; but the engine, the wheels and tires, the springs and, in fact, every part, shares in them and makes its protest, sometimes audible, sometimes inaudible.

If a clutch begins to slip the driver should be able to detect it almost immediately, even although he may not be on the watch for such an occurrence. If he is in doubt about it, there need be little trouble in resolving it. He has only to dismount, stop the engine, and feel the clutch with his hand. It will be quite hot if any slipping has taken place.

The presence of oil on sparking plugs argues that something is wrong. It is probably due to the use of too liberal a quantity of oil, in which case it is splashed too freely. It may be caused by the use of the wrong kind of oil, one that is too light or thin. In either case a remedy should be applied at once.

It is worse to know that there is trouble impending, without being able to tell where the seat of trouble is, than to be conscious of the same approaching disaster with the knowledge that it is the ignition or the mixture or some other part of the complex mechanism that has developed a weakness.

Always use brakes alternately going down a long hill, thus giving each one time for cooling.

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DOUBLE TUBE DETACHABLE

Tire of This Type Produced by Fisk—Novel Constructional Features.

With the submission of a Fisk detachable tire, the well known Chicopee Falls concern is certain to become more than ever a factor in the trade. Genuine novelty in the matter of construction marks the tire, in addition to the quality that has done so much to build up a reputation of the highest class for its makers.

It has been known for some little time that the Fisk Rubber Co., Chicopee Falls, Mass., was at work on a double tube, detachable tire, to supplement its offering of the well-known Fisk single tube tires. The growing demand for a tire that would be an easy riding one, and at the same time susceptible of quick and permanent repair on the road, was recognized, and plans laid to supply it. Such a tire, it was believed, should possess the same excellence of construction that has won for Fisk single tubes their popularity, as well as merits peculiar to detachable tires, but not always present in them.

All this has been accomplished in the double tube Fisk detachable vehicle tire here illustrated and now first shown. The entire air space in this tire is wholly above not only the rim, but also the entire clamping devices, thereby securing maximum action in the tire, as no portion of the air chamber is in any way confined.

The method of attaching used is entirely new and novel. It depends in no way upon the air pressure in the tire to hold it on to the rim, and under no conditions can it blow off from, or creep on, the rim until the clamping bolts shall have been removed. The tire is attached to a perfectly flat rim, which simplifies matters materially, both to the wheel manufacturer and the maker of complete automobiles. Simplicity is a quality which has been developed to the highest degree in this tire, and a glance at the cross section is sufficient to give a clear idea of the method of manipulation.

The design of the tire is such that the base or the beads are held in such a position that the inner tube cannot be pinched under any circumstances, and there is no chance even when handled by the most inexperienced of any mistake being made in attaching, or of the inner tube blowing out when the rings and bolts are once in place. These rings which hold the tires in place have an inside angle surface, and the tire is so designed that the beads play the part of an inside cone wedge, serving two purposes—first, of clamping the beads together, and, second, of locking the base of the tire firmly to the rim, and thereby preventing all danger of creeping.

By the use of this method of attaching, the necessity of using any heavy prying tools is done away with, and any one who can use an ordiary S wrench can attach and detach any sized tire with no exertion whatever, and in a very few minutes. Perhaps secondary to ease of riding, but certainly to an extent never before equalled, is the ease with which this tire can be removed from and replaced on the rim, and in view of the fact that all parts are visible during the operation there is no liability of failure. No experience is necessary, as was proven in Detroit a short time ago, when a boy who had never seen the tire, and with no instructions or having any one present, removed the tire from the rim, took out the inner tube, replaced and inflated in less than fifteen minutes.

The method of manufacture is such that the outer case, when off the rim, assumes the same position as when attached, which enables the operator to insert the inner tube without fear of its being misplaced, pinched or wrinkled while the tire is being attached.



The clamping bolts are designed with a threaded washer and checknut, removing thereby all liability of their working loose.

The material is identical with that used in the well-known and fully proven Fisk single tube tire, including the Fisk automobile fabric, a fact which renders no further comment upon quality and construction necessary.

The tire is fully protected by broad patents, both domestic and foreign.

Toledo Concern Erects a Building.

The Toledo Motor Carriage Co., now at Nos. 713 and 715 Jefferson street, Toledo, O., are having a large three story building put up for them, 44 feet front by 100 feet deep. It is the intention to have the salesroom on the first floor, and repair shop and storage room on the second floor. The third floor will be occupied by the Toledo Automobile Club.

The 1903 line will comprise the Baker, White, Electric Vehicle Co., Winton, Olds, Haynes-Apperson and International cars.

Mabbitt Opens Store at Rochester.

A. F. Mabbit, formerly of Bettys & Mabbit, cycle dealers, has opened an automobile store in Main street, Rochester, N. Y. He will take on the Century Motor Vehicle Co.'s line.

The Week's Exports.

Havre—Motor vehicles and material, 6 cases, $875.

ASSAILS COCKS LAW

Rochester Attorney Asserts its Inconstitutionality on Entirely new Grounds.

Again the malodorous Cocks law is attacked on the ground of unconstitutionality, it being contended that it discriminates against the citizens of unincorporated villages and towns.

The point, along with a number of others, was brought up last week at Rochester, N. Y., by counsel for Harry S. Woodworth, who appealed the case in which in May last Mr. Woodworth was convicted and fined for illegal speeding. Argument was heard before the Appellate Division, Horace McGuire representing the defendant.

The first point raised by Mr. McGuire was that the judgment was against the weight of evidence. He said that the people did not prove beyond a reasonable doubt that the defendant was guilty of the crime charged, and that he should have been discharged upon his motion to that effect.

"The people," he said, "to establish the fact that the defendant was guilty of the crime charged; that he operated an automobile on the highway in the town of Brighton at a greater rate of speed than twenty miles an hour, called several witnesses, who testified that they observed Mr. Woodworth and his automobile passing them upon the highway. These witnesses were asked for their opinion as to the rate of speed, and each gave his opinion based upon observation, and the opinions varied from twenty-five to fifty miles an hour. Some put it high and some put it low. They differed. At best their evidence was speculative, guesswork.

Mr. McGuire called attention to the evidence of the chauffeur, Charles R. Smith, who testified that with the lever in the "second speed ahead," the machine could not possibly travel faster than nineteen miles an hour, and that the lever was at no time operated in any notches other than the first and second "speed ahead," making it an impossibility for the automobile to go as fast as twenty miles an hour. John C. Ryan, formerly city engineer, testified to measurements and speed tests that were made under his direction, which showed that Mr. Smith's evidence was true.

"This unfairly discriminates against citizens of the State," said Mr. McGuire, "because it makes the incorporation of a village the test of criminality; that is to say, an act would be criminal if committed in an incorporated village, and the same would not be criminal if committed in an unincorporated village. Our contention is that this statute is unconstitutional because, instead of making the built up portions of the highway the test of criminality, it protects the people of an incorporated village to the exclusion of the citizens of unincorporated villages without regard to the built up portions thereof."

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WHYS AND WHEREFORES.

(Continued from page 353.)

the time lost by all stops, there are in a few instances apparent discrepancies between the total time lost and the number of marks deducted. This is due to the rule that made any part of a minute cost one mark. Thus a car might have three stops of fifteen seconds, making a total of only forty-five seconds lost, and yet it would lost three marks, one for each stop. This is shown in the case of car C. 4., where 57 minutes were lost, but 58 points deducted. The cars that failed to finish do not figure in this summary.

There were eighty cars entered for the run. Seventy-five started and sixty-eight completed the trip. Seventeen cars had perfect scores, and tied for the president's cup. Three others that lost only one point each were awarded ~~respectively~~ the Scarritt, Chamberlin and Hill cups. Sixty-five machines won first class certificates, one earned a second class certificate and one a third class. Only one of the sixty-eight cars that finished failed to qualify for a certificate, and that was the Torbensen car, which averaged less than eight miles an hour.

An analysis of the total number of stops from all causes due to the mechanism of the car (and including tire troubles and stops for water and gasolene) of the sixty-seven cars receiving certificates is as follows:

GASOLENE CARS.

Forty-nine cars, six of which had no stops, the remaining forty-three having stops as follows:

	Per cent.
Ignition	26
Water circulation	11
Stalled motor	10
Tires	10
Valves	10
Accidental stops	6
Carburetter	5
Transmission gears	4
Springs	2
Gas connections	2
Out of gasolene	2
Lubrication	2
Wheel bearings	2
Chains	2
Clutch	2
Brakes	1
Broken piston	1
Crank shaft, muffler, ~~steering gear~~	2
	100

STEAM CARS.

Eighteen cars, one of which had no stops, the remaining seventeen having stops as follows:

	Per cent.
Water and gasolene	75
Tires	9
Air pressure (all in one car)	5
Water connections	3
Lighting fires	2
Low steam	1
Water-glass	1
Lubrication	2
Brakes, chain, gasolene connections	2
	100

Seven cars withdrew from the contest for the following reasons:

B-6 Foster—Broken crank shaft.
B-14 Autocar—Damaged gear shaft.
B-15 Ward-Leonard—Jaw couplings between engine and speed gear broken; crank shaft bent.
C-50 Neftel—Defective water circulation; hot engine.
A-54 DeDion-Bouton—Broken steering gear.
B-69 Fredonia—Damaged transmission gear.
A-74 Buffalo—Broken connecting rod.

The summary follows:

C. 1., Packard 24 h.p. G. tonneau, 3955 lbs., 2092 marks—Penalized stops, none. Non-penalized stops, 3; 1 min., 31 sec.; recovering hat, two punctures. Control repairs, 4; Oct. 11, straightening spring, tightening clutch and new spark plug; Oct. 12, new clutch lever; Oct. 14, fixed joint of oil pump; Oct. 9, new tire.

C. 2., Packard 12 h.p. G. tonneau, 2615 lbs., 2089 marks—Penalized stops, 1; 3 min.; tightening clutch. Non-penalized stops, 6; 14 min., 45 sec.; Nature, R. R. crossing, Nature, wraps and Nature, R. R. crossing, Nature. Control repairs, none.

C. 3., Packard 12 h.p. G. tonneau, 2690 lbs., 2092 marks—Penalized stops, none. Non-penalized stops, none. Control repairs, 2; Oct. 9, fixed brake cable; Oct. 14, new brake cable.

C. 4., Packard 12 h.p. G. tonneau, 2510 lbs., 2034 marks—Penalized stops, 3; 57 min.; covering contact points, cleaning contact points, fixing intake valve. Non-penalized stops, 5; 11 min., 45 sec.; blocked traffic, recovering seat cushion, blocked traffic, blocked by R. R., pumping tire. Control repairs, 5; Oct. 10, fixed contact spring and throttle regulator; Oct. 11, adjusted oil pump; Oct. 13, changed battery connections; Oct. 15, brightened contact points; Oct. 14, new inner tube for tire.

B. 5., Prescott, 4½ h.p. S. runabout, 1435 lbs., 2092 marks—Penalized stops, none. Non-penalized stops, 8; 29 min.; all for water. Control repairs, 4; Oct. 9, lubricated engine; Oct. 10, cleaning thumb nuts; Oct. 12, adjusted chain strut rod; Oct. 14, adjusted chain strut rod.

B. 7., Lane, 9 h.p. S. runabout, 1790 lbs., 2092 marks—Penalized stops, none. Non-penalized stops, 14; 33 min.; ten for water, three for R. R. crossing, one for Nature. Control repairs, none.

B. 8., Lone 9 h.p. S. surrey, 1690 lbs., 2085 marks—Penalized stops, 2; 7 min.; replaced pin valve stem of cylinder lubricator, tightened union in water pipe. Non-penalized stops, 11; 1 hr., 4 min.; all for water. Control repairs, 1; Oct. 12, new tire.

C. 10., Haynes-Apperson 9 h.p. G. surrey, 2140 lbs., 2077 marks—Penalized stops, 2; 14 min.; replacing broken chain, new ignition pin and lubrication. Non-penalized stops, 4; 48 min., 5 sec.; Nature, blocked traffic, blocked by R. R., new inner tire tube. Control repairs, none.

B. 11., Haynes-Apperson 9 h.p. G. single seater, 1945 lbs., 2092 marks—Penalized stops, none. Non-penalized stops, 1; 5 sec.; traffic. Control repairs, none.

B. 12., Haynes-Apperson, 6 h.p. G. runabout, 1370 lbs., 1910 marks—Penalized stops, 2; 3 hrs., 1 min., 30 sec.; funnel fell against magneto and closed circuit, repaired spring hangers and center swivel damaged by running into ditch to avoid collision. Non-penalized stops, 4; 7 min., 30 sec.; R. R. crossing, recovering hat, blocked traffic, recovering extra tire. Control repairs, 4; Oct. 13, fixed first speed clutch; Oct. 13, fixed clips on spring; Oct. 11, new tire; Oct. 14, found nails in tires, but no leaks.

B. 13., Autocar 10 h.p. G. single seater, 1610 lbs., 2083 marks—Penalized stops, 1; 9 min.; chain off pump. Non-penalized stops, 4; 28 min.; blocked traffic, Nature, Nature, Nature. Control repairs, none.

B. 16., Ward-Leonard 15 h.p. G. two-seater, 1875 lbs., 1974 marks—Penalized stops, 12; 1 hr., 30 min., 35 sec.; new spark plug, fixed intake valve, new valve key, valve trouble, changed battery, adjusted bearings, oil valve in motor case opened and motor stopped, accidentally opened igniter switch, motor stopped while running in ditch to pass steam roller, cleaned spark plug, closed oil valve, cleaned spark plug. Non-penalized stops, 4; 1 hr., 35 min.; R. R. blocked, traffic blocked, Nature, repairing tire. Control repairs, 4; Oct. 15, cleaned spark plug; Oct. 13, repaired tires; Oct. 14, repaired tire; Oct. 15, repaired tire. Marks lost at controls—early, 5; late, 19.

C. 17., Apperson 16 h.p. G. touring car, 2580 lbs., 2070 marks—Penalized stops, 1; 22 min.; repairing brake. Non-penalized stops, 6; 9 min., 5 sec.; R. R. crossing, Nature, blocked traffic, recovering hat, R. R. crossing, Nature. Control repairs, 2; Oct. 11, repacking water pump; Oct. 12, water leak soldered.

C. 18., Brazier 15 h.p. G. tonneau, 2850 lbs., 1893 marks—Penalized stops, 9; 4 min., 30 sec.; motor stalled seven times, clutch stuck, intermediate gear on pump shaft stripped and was towed into Worcester. Non-penalized stops, 5; 3 min., 23 sec.; blocked traffic five times. Control repairs, 7; Oct. 10, fixed loose screw of speed clutch; Oct. 11, adjusted speed lever; Oct. 13, replaced broken gear; Oct. 14, wired water cooler, new spark plug, new nuts on gear case, cleaned oil pump; Oct. 14, fixed broken wagon spring; Oct. 15, cleaned admission valves, adjusted speed clutches and spark coils, new spark plug; Oct. 15, adjusted sparking apparatus. Marks lost at controls—towed into Worcester, 191.

A. 19., Torbensen 5 h.p. G. runabout, 990 lbs., 1216 marks—Penalized stops, 32; 5 hrs., 13 min., 30 sec.; fixed broken wire six times, fixed vibrator six times, ten stops due to sparking trouble, loose water connection, water, plug fouled, intake valve broken twice, carburetter stopped, water pipe and spark trouble, new battery, broken water connection, broken steering knuckle. Non-penalized stops, 9; 1 hr., 14 min., 15 sec.; Nature, Nature, frightened horse, R. R. crossing, lighting lamps, puncture, pumping tire, puncture, tire burst and machine climbed sidewalk, wrecking a wheel. Control repairs, 5; Oct. 10, pump connections and vibrator cleaned; Oct. 11, new intake valve and spark plug; Oct. 12, loose plug in cylinder head; Oct. 13, new spark coil and cable; Oct. 14, lengthened clutch rod. Marks lost at controls—late, 16; missed control, 191; late, 59; missed control, 223; late, 2; late, 50.

A. 20., Pierce 4½ h.p. G. motorette, 832 lbs., 2088 marks—Penalized stops, 1; 4 min.; cleaning spark plug. Non-penalized stops, 4; 12 min., 30 sec.; Nature, pumped tire three times. Control repairs, 10; Oct. 10, adjusted crank shaft bearings, adjusted trembler and oiled transmission gear; Oct. 11, cleaned spark plug; Oct. 11, adjusted spark plug; Oct. 13, adjusted spark plug and trembler and oiled gears; Oct. 13, adjusted spark plug and oiled up; Oct. 14, cleaned spark plug; Oct. 14, new spark plug; Oct. 15, new spark plug; Oct. 15, new spark plug.

B. 21., Darracq 12 h.p. G. tonneau, 1612 lbs., 2091 marks—Penalized stops, 1; 30 sec.; put on emergency brake suddenly to avoid gully and engine stopped. Non-penalized stops, 3; new inner tube for tire, replacing tire, pumping tire. Control repairs, 3; Oct. 10, new inner tube; Oct. 11, new inner tube; Oct. 13, new inner tube.

C. 23., Apperson 16 h.p., 2690 lbs., 2021 marks—Penalized stops, 4; 1 hr., 9 min., 9 sec.; clutch loosened twice, repairing pump and water coils, repairing circulation pump. Non-penalized stops, 3; 12 min., 40 sec.; lighting lamps, recovering lamp top, R. R. crossing. Control repairs, 2; Oct. 11, adjusted speed change; Oct. 13, fixed circulating pump.

B. 24., White 6 h.p. S. stanhope. 1505 lbs., 2092 marks—Penalized stops, none. Non-penalized stops, 2; 24 min.; water, fixing tire. Control repairs, 4; Oct. 13, tightened chain and set up stuffing boxes; Oct. 14, opened fire regulator, cleaned gasolene pipe and tightened joint in vaporizer; Oct. 15, opened fire regulator.

B. 25., White 6 h.p. S. stanhope, 1475 lbs., 2092 marks—Penalized stops, none. Non-penalized stops, none. Control repairs, none.

B. 26., White 6 h.p. S. stanhope, 1675 lbs., 2092 marks—Penalized stops, none. Non-penalized stops, none. Control repairs, none.

B. 27., White 6 h.p. S. Stanhope, 1675 lbs., 2092 marks—Penalized stops, none. Non-

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penalized stops, 1; 8 min.; replenished water that jolted out. Control repairs, 8; Oct. 9, 10, 11, 13, 14, 15, cleaned condenser sponge; Oct. 14, cleaned water tank; Oct. 15, replaced tire.

B. 28., White 6 h.p. S. delivery wagon, 1690 lbs., 2088 marks—Penalized stops, 1; 4 min.; steam pressure too low. Non-penalized stops, 4; 1 hr., 50 min., 15 sec.; R. R. crossing, puncture, pumping tire, new inner tube. Control repairs, Oct. 11, new plunger in air pump; Oct. 13, new inner tube; Oct. 13, fixed tire.

C. 29., Locomobile 12 h.p. G. touring car, 2340 lbs., 1895 marks—Penalized stops, 2; 15 min., 15 sec.; broken intake valve, changing gears. Non-penalized stops, 7; 24 min., 45 sec.; blocked traffic, rendering aid after accident, blocked traffic, Nature, lighting lamps, lighting lamps, recovering cap. Control repairs, 7; Oct. 10, cleaned governor valve; Oct. 11, new exhaust valve; Oct. 13, new spark plug, and cleaned admission valve; Oct. 13, new spark plug; Oct. 14, new spark plug; Oct. 14, sheared off six bolts in bevel gears and put on new brake shoe; Oct. 15, two new spark plugs and one new brake band. Marks lost at controls—les sthan eight miles an hour, Hartford to New Haven, 181.

B. 30., Stevens 6 h.p. G. runabout, 1155 lbs., 2091 marks—Penalized stops, 1; 30 sec.; neglected to open cock between gasolene tank and carburetter. Non-penalized stops, 4; 3 min., 9 sec.; R. R. crossing, traffic blocked three times. Control repairs, 2; Oct. 9, pushed gear case back to prevent rattle; Oct. 15, new tire.

B. 31., Stevens 6 h.p. G. runabout, 1180 lbs., 2073 marks—Penalized stops, 1; 10 min.; broken chain. Non-penalized stops, 2; 5 min.; R. R. crossing, Nature. Marks lost at controls—early, Oct. 15, 9.

B. 32., Rambler 6 h.p. G. runabout, 1112 lbs., 2088 marks—Penalized stops, 2; 3 min., 30 sec.; dust-clogged vibrator, hot engine. Non-penalized stops, 4; 7 min., 5 sec.; Nature, R. R. crossing, R. R. crossing, blocked traffic. Control repairs, 1; Oct. 11, adjusted chain.

B. 33., Grout 6½ h.p. S. touring car, 1130 lbs., 2092 marks—Penalized stops, none. Non-penalized stops, 10; nine for water, one for train. Control repairs, 4; Oct. 11, adjusted chain and tightened brake; Oct. 14, new water glass; Oct. 14, cleaned check to cylinder lubricator; Oct. 15, repaired iron body hanger.

C. 34., Locomobile 10 h.p. S. touring car, 3030 lbs., 2022 marks—Penalized stops, 1; 1 hr., 10 min.; new valve in top of water pump. Non-penalized stops, 23; 5 hrs., 52 min., 30 sec.; fifteen stops for water, four new inner tubes for same tire; two frightened horses, blocked traffic; Nature. Control repairs, 2; Oct. 11, new water glass; Oct. 15, cleaned boiler gauge and adjusted pump rod.

B. 35., Locomobile 4 h.p. S. runabout, 1210 lbs., 2091 marks—Penalized stops, 1; to light fire. Non-penalized stops, 13; eleven for water, one for gasolene, one for pumping tire. Control repairs, 4; Oct. 13, piston packed; Oct. 14, new connecting rod; Oct. 15, piston packed; Oct. 11, two new tires.

B. 36., Locomobile 4 h.p. S. runabout, 1215 lbs., 1848 marks—Penalized stops, 1; towed into finishing control at N. Y., water having given out. Non-penalized stops, 20; 2 hrs., 49 min., 17 sec.; eleven stops for water, six stops for Nature, R. R. crossing, gasolene, tire valve leaking. Control repairs, 9; Oct. 10, lubricated and adjusted; Oct. 10, took water and pumped air; Oct. 11, repaired and cleaned pump oil cup; Oct. 12, fixed oil cup of air pump and put in small piece of piping; Oct. 13, cleaned and lubricated; Oct. 13, lubricated and took water; Oct. 14, lubricated and took water; Oct. 15, lubricated; Oct. 15, new tire. Marks lost at controls—late at Hartford, 15; late at Springfield, 7; early at Worcester, 2; late at Springfield, 30; towed to finish, 190.

B. 38., Elmore 5 h.p. G. runabout, 1280 lbs., 2030 marks—Penalized stops, 70; 51 min., 59 sec.; one cylinder missed fire, rubber apron blew into speed clutches three times, engine heated up three times because of leak in radiator. Non-penalized stops, one; few seconds to recover cap. Control repairs, 5; Oct. 10, oiled up; Oct. 11, oiled and adjusted and shortened brake rod; Oct. 12, tightened chain, examined pumped a tire. Marks lost at controls—late at N. Y., 9.

B. 39., De Dion-Bouton, France, 8 h.p. G. tonneau, 1395 lbs., 2082 marks—Penalized stops, 4; 12 min., 31 sec.; sooty plug, tightened inlet valve, broken trembler, adjusted inlet valve. Non-penalized stops, 1; 3 min., 35 sec.; open drawbridge. Control repairs, 1; Oct. 10, new inner tube for tire.

B. 40., Autocar 10 h.p. G. two-seater, 1430 lbs., 1867 marks—Penalized stops, 5; 3 hrs., 26 min.; vaporizer flooded, broken stopcock let out gasolene, gasolene feed tube broken, broken wire and friction pulley to pump, overheated engine. Non-penalized stops, none. Marks lost at controls—early at Worcester, 19.

A. 41., Oldsmobile 4 h.p. G. runabout, 860 lbs., 2070 marks—Penalized stops, 5; 21 min., 5 sec.; broken gasolene pipe to mixer and sulphured clutch, pump troubles, operator's sleeve shut off spark, water in carburetter, broken wire. Non-penalized stops, none. Control repairs, 7; Oct. 9, link removed from chain and clutch tightened; Oct. 10, replaced cylinder head gasket; Oct. 11, the same; Oct. 11, adjusted vibrator and cleaned contacts; Oct. 12, replaced cylinder head gasket; Oct. 13, adjusted vibrator; Oct. 15, adjusted vibrator, cleaned carburetter and repaired brake.

C. 42., Fournier-Searchmant 8 h.p. G. tonneau, 2200 lbs., 2092 marks—Penalized stops, none. Non-penalized stops, 10; 20 min., 1 sec.; blocked traffic twice, Nature five times, frightened horse, blocked by R. R. train drawbridge open. Control repairs, 7; Oct. 10, examined spark plug and inlet valve; Oct. 12, ground exhaust valves and cleaned spark plugs; Oct. 13, examined float chamber, added tension to commutator spring and cleaned contact points; Oct. 14, cleaned contact points; Oct. 15, cleaned contact points; Oct. 10, pumped tire; Oct. 11, pumped tires.

C. 43., Packard 12 h.p. G. tonneou, 2600 lbs., 1815 marks—Penalized stops, 13; 4 hrs., 58 min., 50 sec.; leak in water system, ignition troubles, lubricator, broken wire, gas feed choked, fixed carburetter float and adjusted chain, gears examined, hot box and bearing cup broken and spring leaves out of bearing cup broken and spring leaves out of line; same thing again, motor stopped, spark trouble, short circuit, ball bearing broken. Non-penalized stops 2; 2 min., 15 sec.; road blocked, Nature. Control repairs, 5; Oct. 12, changed cells of battery and tightened hub dust cap; Oct. 13, cleaned carburetter; Oct. 13, new bolt in strut rod of chain; Oct. 14, bolt drilled out of strut rod and new one put in; Oct. 15, new cone in front wheel. Marks lost at controls—early at Norwalk, 14; less than eight miles an hour between New Haven and Norwalk, 148.

B. 44., Darracq 16 h.p. G. tonneau, 1885 lbs., 1262 marks—Penalized stops, 4; 1 hr., 10 min., 12 sec.; short circuit, broken spark connection, gasolene feed blocked, sooty plug. Non-penalized stops, 1; R. R. crossing. Control repairs, 5; Oct. 9, new front spring, new inlet valve, valves ground and plug cleaned; Oct. 12, took in gasolene; Oct. 13, plugs cleaned and new connection to plug; Oct. 14, cracked body spring fixed; Oct. 15, fixed lamp bracket. Marks lost at controls—missed control N. Y. to Norwalk, 190; missed control Norwalk to New Haven, 148 marks; missed control Springfield to Worcester, 223; Missed control Worcester to Boston, 191; early at Norwalk, 6.

B. 37., Elmore 5 h.p. G. runabout, 1220 lbs., 2087 marks—Penalized stops, 1; 5 min.; to open holes in muffler. Non-penalized stops, none. Control repairs, 3; Oct. 10, tightened bolts of cylinder head; Oct. 11, the same; Oct. 13, tightened connecting rod of one motor.

B. 45., Franklin 8 h.p. G. roadster, 1150 lbs., 2086 marks—Penalized stops, 3; 4 min., 45 sec.; spark failed, spark failed, engine stalled. Non-penalized stops, none. Control repairs, 13; Oct. 9, inspection; Oct. 10, cleaning; Oct. 10, inspection; Oct. 11, cleaning; Oct. 11, cleaning and inspection; Oct. 12, cleaned and adjusted; Oct. 13, inspection; Oct. 14, cleaning; Oct. 14, two new cells; Oct. 15, inspection; Oct. 15, adjust spark plug and tightened belt on magneto; Oct. 14, set up igniter spring; Oct. 9, ment; Oct. 10, new tire shoe; Oct. 12, new tire shoe.

B. 46., Knox 8 h.p. G. single-seater, 1465 lbs., 1798 marks—Penalized stops, 1; broke crank shaft. Control repairs, 6; Oct. 9, new oil cup on cylinder; Oct. 10, tightened chain and coupling of gasolene feed pipe; Oct. 11, tightened crank pin box and took up high speed clutch; Oct. 14, tightened chain; Oct. 14, reset ignition cam; Oct. 15, adjusted conreset ignition cam; Oct. 15, adjusted contact points. Marks lost at controls—missed control New Haven to Hartford, 180; missed control Hartford to Springfield, 113.

B. 47., Knox 8 h.p. G. single-seater, 1435 lbs., 2092 marks—Penalized stops, none. Non-penalized stops, 1; slowed down for blocked street and accidentally stalled motor. Control repairs, 3; Oct. 10, tightened belt on fan; Oct. 11, oiled and adjusted; Oct. 14, adjusted connecting rod and ground exhaust valve.

B. 48., Knox 8 h.p. G. single-seater, 1425 lbs., 2091 marks—Penalized stops, 1; 20 sec.; stalled motor. Control repairs, 5; Oct. 10, adjusted vibrator; Oct. 11, adjusted vibrator, fixed crank pin and cleaned spark plug; Oct. 13, fixed crank pin; Oct. 13, resin on fan belt; Oct. 14, tightened chain, set up nuts.

B. 49., Fiat 12-16 h.p. G. tonneau, 1920 lbs., 1812 marks—Penalized stops, 1; 1 hr., 15 min.; repairing gear case and adjusting valves and magneto. Non-penalized stops, 3; 40 sec.; lighting lamps, blocked traffic, took wrong road because of arrows being down. Control repairs, 6; Oct. 10, engine oiled and fan belt tightened; Oct. 11, gear case repaired and adjustments made; Oct. 13, inlet valves adjusted; Oct. 14, temporary repairs to one spring; Oct. 15, gear case repaired; Oct. 11, new inner tube. Marks lost at controls—late at Boston, 15; missed control Norwalk to New York, towed in to finish, 190.

B. 51., Stearns 8 h.p. S. touring car, 1620 lbs., 2027 marks—Penalized stops, none. Non-penalized stops, 23; 1 hr., 39 min., 15 sec.; all stops made for water. Control repairs, 4; Oct. 9, new nipple safety valve cock; Oct. 10, new bolt compensating gear cover and new water glass; Oct. 12, repaired mud guard and tightened up stuffing boxes; Oct. 15, fixed sight feed lubricator and put clip on side box. Marks lost at controls—early at Norwalk, 9; early at New Haven, 3; early at Hartford, 10; early at Worcester, 9; erly at Boston, 12; early at Worcester, 8; early at Springfield, 10; early at Norwalk, 4.

C. 52., Winton 15 h.p. G. tonneau, 2300 lbs., 2090 marks—Penalized stops, 2; 30 sec.; stalled on hill, flooded carburetter. Non-penalized stops, 1; adjusting lap robe. Control repairs, 3; Oct. 10, pumped tire; Oct. 13, pumped tire twice.

B. 55., Long Distance 7 h.p. G. runabout, 1570 lbs., 2090 marks—Penalized stops, 1; 2 min.; oiling. Non-penalized stops, 4; 3 min., 25 sec.; recovered lost hat twice, R. R. crossing twice.

B. 56., Long Distance 7 h.p. G. runabout, 1610 lbs., 1918 marks—Penalized stops, 10; 2 hrs., 19 min., 15 sec.; water, cooling motor, cooling motor, examining front axle, fixed broken steering knuckle, blew out valve packing, hot motor, bumper under spring fell out, tightened inlet pipe, replacing wooden bumper. Non-penalized stops, 1; 3 min.; Nature. Control repairs, 4; Oct. 10, inspected crank case; Oct. 12, straightened axles and fixed bearings of engine; Oct. 14, tightened nuts; Oct. 15, replaced wooden bumper under broken spring. Marks lost at controls—late at Norwalk, 32.

A. 57., Pierce 5 h.p. G. motorette, 837 lbs., 2085 marks—Penalized stops, 1; 7 min.; replaced broken inlet valve stem. Non-Penalized stops, 4; 1 min., 45 sec.; three stops at R. R. crossings, one for frightened horse. Control repairs, 6; Oct. 10, cleaned spark plug; Oct. 10, same; Oct. 11, same; Oct. 11, new spark plug and tightened high speed clutch; Oct. 13, cleaned plug; Oct. 14, same.

A. 58., Rambler 4 h.p. G. runabout, 1100 lbs., 2022 marks—Penalized stops, 12; 51 min.,

(Continued on page 364)

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Commentary

Supposing you had a fine looking horse, one who was all right in every way, only he would occasionally bite off a groom's arm or else deftly kick his brains out—do you think it would add to your chance of selling the animal if, when you came to advertise him, you offered in your advertisement to present the purchaser with a steel muzzle and an anti-kicking harness? Don't you think the possible buyer might be inclined to think your desire to sell your horse and to give away such peculiar equine toilet articles as a bit suggestive? Seems to me that is the way I would look at it, but I suppose I must be an unusually suspicious soul, because evidently other people haven't the same ideas, or else this advertisement would never have appeared in Sunday's paper:

"FOR SALE—10 H. P. 4 Cylinder P—— Car, in Perfect Running Order; Practically New, with full equipment, lamps, tools, baskets, spare parts, &c.; also $10,000 Accident Policy and $5,000 Insurance Policy; owner's sole reason for selling is on account of going abroad."

Don't it strike you that it would have been money saved and suspicion unaroused if the owner, when writing this advertisement, had temporarily forgotten about those two insurance policies?

* * *

There are always two sides in any argument regarding the building, designing or using of a motor vehicle—the wrong side and our side.

* * *

It must be very annoying when one is fishing for suckers and when equipped with tackle only of a strength sufficient to land these soft marks of angling to suddenly find you have hooked a whale who declines either to unhook himself or to allow you to do it for him. This predicament was the one that the rural road officers and their side partner, the justice of the peace, recently found themselves in down on Long Island. They had hooked a big semi-racing car and had attempted to land the driver for the usual shakedown, to be divided between the constables arresting and the judge trying the accused automobilist. After the prisoner was given a chance to tell who he was it dawned upon the conspirators that they had hooked onto a whale. The accused was a big politician and a millionaire with a political and financial pull bigger than a Brooklyn bridge cable.

The case was hastily adjourned by the justice and an attempt was made to get the accused to admit he had been violating the speed ordinances, as the Waterbury-holding constable had taken his solemn oath he had seen him "wilfully" do. The automobilist said he wasn't guilty, wouldn't pay, and if he was fined or annoyed he'd take the case and those responsible for it to a court where shakedowns were not recognized. Then there was more trouble in the camp of the sucker catchers. Nobody knows what might have happened had not the justice, in reading over the charges, discovered that the automobilist was charged by the Waterburyer with having "wilfully" driven faster than the law allowed. There was a hole for the judge and his partners to crawl through. It was a small hole, but in such cases Long Island judges and janissaries feel pretty small themselves, so they crawled. The judge said it was not proven that the accused was "wilfully" guilty, so the case was quashed. Thus it comes to pass that Mr. Cord Meyer, politician and man of affairs, was not a contributor to the Christmas spending money of one Long Island justice and one Long Island constable.

* * *

It is positively surprising how many things about an automobile some people do not learn from experience.

* * *

The more I watch automobile users the less I am able to understand why the possession or the driving of a motor vehicle seems instinctively to rob one of all pride of appearance; that "something" that makes and marks the aristocracy of the horse. Take the picture presented by a well groomed man—and you never saw any other kind—driving a tandem or a four-in-hand, and, no matter what you may say, you know that the whole affair, from the well oiled hoofs of the satin-skinned animals to the silken lash of the well poised whip, is the height of what for lack of a better name is termed "good form."

Now take an automobile. Let it be the finest money can buy and the driver of it the very same man, if you will, whom you so admired when he tooled the four-in-hand or the tandem team, and what is the difference? Just about the same that there is between the occupant of the box seat on a four-in-hand and the occupant of the engineer's seat in the cab of a locomotive, I should say. But why? I don't know, but if you can tell me I'll be glad to make the secret one no longer. As it is, I have tried to figure the thing out until I am tired, and so I turn the job over to you, if you want it.

* * *

After you start in to purchase automobile experience you will generally find that what you buy is not of the same quality as the sample you selected it by.

* * *

Horse sense is a peculiar and very uncertain thing. Some high-strung animals apparently cannot become reconciled to the sight of any moving vehicle which is independent of their aid, while others shy when they see a silent and motionless vehicle at the curb. A mounted policeman, who, with myself, formed a part of the audience which a disabled touring car had attracted upon Jerome avenue recently, told me when we got to talking about this that he believed that horses which were thus frightened became so through failing to see any pole or shafts in front of the new vehicle. I failed to get any facts from him which would seem to substantiate his theory, and he confessed he hadn't any except that his observation had led him to believe as he did.

* * *

It is a remarkable fact that when it comes to running a motor vehicle the man who knows all about it usually disagrees with the other man who knows all about it. Ever notice that?

* * *

Of course, I know it is an impertinence to even think of such a thing, but even so, I certainly would like to know what the real rock-bottom price is on some vehicles. I got a letter recently from a concern, or rather from an officer thereof, offering me a 25 per cent commission on every automobile made by his concern that I was instrumental in selling. All I was expected to do was to tip off the offer-maker whenever I learned of any one who was inclined to purchase a motor vehicle. After that the concern was to do the rest, and me, too, I suppose. Now, if a rank outsider like I am can, without even asking for it, get a rake-off of one-quarter of the price, what do you suppose an insider with a pull and the inclination to exert it could get?

* * *

"She's sulky and won't do herself justice. We might just as well turn around and try to get home before she refuses to move at all." This was what a friend of mine said who had taken me out in a big touring car he owned, and of which he was very proud, hence anxious to have it do its best. The "she" was, of course, the car. It really did seem as though the big conveyance was protesting in every way possible against doing what was expected of it. All pleasure of riding was absent, and I myself felt in an indefinable way that the harmony between the driver and the driven was lacking. The experience was not by any means a new one, however. There can be no denying that there is a peculiar affinity between an automobile and its driver. There are days when the two seem to work in perfect unison, each a part of a complete mechanism. There are other days when either the driver or the vehicle is out of harmony. Others there are when both are unattuned. I am not sure just which condition prevailed on the occasion I am writing about, but I know "she" quit dead just after we had passed over Central Bridge on our way back, and we sat on the dead one like a coroner's jury for more than an hour before the man we had telephoned the storage station for arrived, and with a strong arm and equally strong language banged "her" into submission. She carried us back to the storage place, but she creaked and groaned and snorted and spluttered so that you had no difficulty in discovering that it was no willing service which "she" was rendering.

THE COMMENTATOR.

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BRITISH CLUB PREPARES

Adopts Rules Governing Preliminary Bennett Cup Trials—Two Napiers Selected.

While the search for a suitable road in Ireland on which to run the Bennett Cup race is still being prosecuted by the Automobile Club of Great Britain, the latter has gone ahead and arranged for the selection of a team to represent it. The formal challenge from the Automobile Club of France has already been received.

It has been decided that two Napier cars shall be entered by their makers; but in doing so the club records that they do not wish it to be taken as a precedent by which the winner of the Gordon Bennett race in one year should claim the right to enter two cars in the following year.

Having thus decided as to two of the three cars, the committee have laid down conditions as to an eleminating test for the third car. Their makers will have to contribute at the rate of $250 per car toward the cost of organizing the race, which will be run on a mile track and on a hill—the location of both to be announced later.

This eliminating test will consist of three runs down (the time to be taken over the flying kilometre); three runs up (the time to be taken over the flying kilometre); three runs down (time to be taken over the standing mile); three runs up (time to be taken over the standing mile), and three times up the hill.

To arrive at the results there will be ascertained (1) the mean speed made over the six journeys over the flying kilometre, and from this will be calculated how long the car would take, travelling at that mean speed, to complete twelve miles. (2) There will also be ascertained the average speed made by the car on the six journeys over the standing mile, and from this will be calculated how long the car would have taken in covering three miles at that average speed. (3) From the records made in the three ascents of the hill it will be ascertained what was the average speed, and from this will be calculated what would be the time occupied, when travelling at this average speed, in covering one mile. The total time which would be occupied in covering the sixteen miles above referred to will thus be ascertained, and the car which proves to have been the fastest over the sixteen miles will be the winner.

Entries for the elimination race must be made before noon on December 8, each entry to be accompanied by a check for $2,500. If a car entered is not at the appointed place by an hour to be stated on April 10, or any subsequent date which may be fixed by the committee, the $2,500 will be forfeited.

CUP RULES CHANGE

Methods of Starting and Finishing, and a few Other Details Altered.

It appears that the Bennett Cup rules now in the possession of the Automobile Club of America are the original set adopted by the French club, and not the revised set. A couple of important amendments have been made to the first lot of rules, and the French organization has been dilatory about forwarding these amendments. The tenor of them, however, is known. Rule 7, the original reading, as published last week in the Motor World, fixes only a minimum limit of weight of 400 kilogrammes (882 pounds), but this has been amended so as to read that the cars shall weight not less than 400 kilos, nor more than 1,000 kilos, the maximum limit being equivalent to 2,205 pounds.

Rule 13 has been amended so that instead of calling for the vehicles to be started simultaneously, it requires that they shall be started two minutes apart. Rule 14 has been changed so as to conform to the plan of starting. The altered rule, instead of reading that the first machine to cross the line of finish shall be declared the winner, says that the machine which makes the best time shall be the winner.



BUILT TO CARRY THREE TONS OF ROOFING MATERIAL.

Pressed Into Coal Delivery Service.

A surplus of snow on the streets, combined with a shortage of coal and coal carts, were the conditions on last Sunday that made the Hudson Coal Co., of Jersey City, a convert to the automobile. It borrowed an electric truck, which was built to haul only three tons of roofing material, and loaded it with five tons of coal to be taken to New York. The roofing truck hauled its excess load all right, and before the day was over had made three trips between the two cities and delivered fifteen tons of coal. The next day the coal company placed an order for three trucks.

One of the Societe Electromotion's electrical vehicles was recently driven from Paris to Vernon and back, a distance of ninety-four miles, on one charge of the battery, which comprised ninety-six cells of the Phoenix type.

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WHYS AND WHEREFORES.

(Continued from 361.)

15 sec.; battery, water, ignition, gasolene, engine stopped, setting valve, setting valve, engine stopped, ignition, ignition, commutator cleaned. Non-penalized stops, 9; 11 min., 25 sec.; picked up hat five times, traffic blocked, Nature, R. R. crossing. Control repairs, 9; Oct. 9, cleaned plug; Oct. 10, cleaned plug and adjusted igniter; Oct. 10, vibrator adjusted and new battery put in; Oct. 11, the same; Oct. 11, cleaned valves; Oct. 13, new coil and new spark plug; Oct. 13, new battery, carburetter and cam fixed; Oct. 14, adjusted vibrator and set up nuts; Oct. 15, vibrator and tightened chain.

C. 59., Winton 16 h.p. G. touring car, 2340 lbs., 2074 marks—Penalized stops, 5; 15 min., 31 sec.; spark, spring troubles, trembler, new trembler spring, new trembler spring. Non-penalized stops, 8; 1 hr., 10 min., 12 sec.; open drawbridge, Nature, Nature, getting cap, R. R. crossing, hat off, tire trouble, tire burst. Control repairs, 6; Oct. 10, broken steering head; Oct. 10, new pin in pump pinion and adjusted spark plug; Oct. 11, pin in pump pinion; Oct. 12, cleaning and replacing parts; Oct. 13, strengthening steering head with clamps; Oct. 14, two new tires.

B. 60., Grout 6½ h.p. S. touring car, 1145 lbs., 2087 marks—Penalized stops, 1; 5 min.; replaced water glass. Non-penalized stops, 12; 1 hr., 35 min.; all for water. Control repairs, 4; replaced water glass four times; Oct. 11, twice, 14 and 15.

B. 61., Grout 6½ h.p. S. touring car, 1100 lbs., 2081 marks—Penalized stops, 2; 9 min., 35 sec.; put in water glass, low steam on hill. Non-penalized stops, 13; 1 hr., 11 min., 48 sec.; ten stops for water, two for R. R. gates, one for blocked road. Control repairs, 4; Oct. 9, water glass replaced; Oct. 10, brake rod and chain tightened; Oct. 12, the same; Oct. 14, chain tightened.

C. 62., International 16 h.p. G. touring car, 2915 lbs., 2079 marks—Penalized stops, 4; 8 min.; spark failed twice, put in new plug twice. Non-penalized stops, 2; 2 min., 20 sec.; traffic blocked, Nature. Control repairs, 4; Oct. 9, two new spark plugs; Oct. 11, three new spark plugs; Oct. 15, repaired governor; Oct. 14, new inner tube. Marks lost at controls—early at Springfield, 4.

A. 63., Oldsmobile 4 h.p. G. runabout, 945 lbs., 2092 marks—Penalized stops, none. Non-penalized stops, 2; 3 min., 30 sec.; open drawbridge, motor stopped by sudden swerve to avoid collision. Control repairs, 2; Oct. 13, adjusted chain; Oct. 15, tightened high speed clutch.

A. 64., Oldsmobile 4 h.p. G. runabout, 920 lbs., 2088 marks—Penalized stops, 1; 5 sec.; carburetter flooded. Non-penalized stops, 2; 6 min.; drawbridge open, blocked traffic. Control repairs, 3; Oct. 10, 14, 14, tightened chain. Marks lost at controls—early at Worcester, 3.

B. 65., Automotor 12 h.p. G. touring car, 1550 lbs., 2044 marks—Penalized stops, 4; 37 min.; tightened bolt on gear drive twice, replaced pin on pump, adjusted commutator chain. Non-penalized stops, 1; 30 sec.; R. R. crossing.

C. 66., Panhard 12 h.p. G. tonneau, 2790 lbs., 2082 marks—Penalized stops, 1; 10 min., repaired pump wheel. Non-penalized stops, 4; 2 hrs., 3 min., 35 sec.; open drawbridge, three tire repairs.

C. 67., Fournier-Searchmont 10 h.p. G. tonneau, 2610 lbs., 2092 marks—Non-penalized stops, 2; 34 min., 15 sec.; hat fell in sprocket and bent countershaft rod, chain broke. Control repairs, Oct. 11, new pin in brake band.

B. 68., Fredonia 9 h.p. G. runabout, 1400 lbs., 2092 marks—Penalized stops, none. Non-penalized stops, 3; 1 min., 30 sec.; R. R. crossing, Nature, puncture. Control repairs, 4; Oct. 13, tightened chain; Oct. 10, new inner tube; Oct. 11, new tire; Oct. 14, repaired puncture.

B. 70., Foster 4 h.p. S. touring car, 1500 lbs., 2092 marks—Penalized stops, none. Non-penalized stops, 24; ten for water, R. R. crossing, recovering record book, blocked traffic, R. R. crossing, rain coat and lighting lamps, R. R. crossing, Nature, fixed tire that pulled off six times, pumped tire. Control repairs, 1; new tire.

A. 71., French De Dion-Bouton 6 h.p. G. motorette, 920 lbs., 1885 marks—Penalized stops, 5; 21 min., 30 sec.; new spark plug, motor stalled, broken transmission gear, repaired spark plug, broke piston. Non-penalized stops, 1; blocked traffic. Control repairs, 3; Oct. 10, cleaned plug, trembler and inlet valve; Oct. 15, new piston, and new bushing at crank end; Oct. 15, repaired broken casting. Marks lost at controls—late at Norwalk, 4; towed to New Haven, 181.

B. 73., Foster 4 h.p. S. surrey, 1640 lbs., 1540 marks—Penalized stops, 23; 6 hrs.; seven times for air pressure, lighting fire twice, repaired air pump three times, repairing air tank twice, fixed lubricator, put on chain, fixed broken nipple, getting up steam, cleaning check valve, low steam pressure, overtime taking water twice, let out water from air tank. Non-penalized stops, 27; 3 hrs., 30 min., 30 sec.; twenty-one stops for water, two for gasolene, Nature twice, blocked traffic, tire trouble. Control repairs, 2; Oct. 12, repaired air tank; Oct. 12, cleaned check valves and cleaned machinery. Marks lost at controls—missed control, Worcester to Boston, 191.

B. 75., Rambler 4½ h.p. G. runabout, 1180 lbs., 2070 marks—Penalized stops, 2; 19 min.; battery connection, inlet valve pin lost and short circuit. Non-penalized stops, 4; 29 min.; Nature, blocked traffic, Nature, funeral procession. Marks lost at controls—late, 1; late, 2.

C. 76., Fournier-Searchmont 8 h.p. G. tonneau, 2065 lbs., 2092 marks—Penalized stops, none. Non-penalized stops, 8; 7 min., 44 sec.; R. R. crossing, interference by another contestant, R. R. crossing, Nature three times, frightened horse, blocked traffic. Control repairs, 1; Oct. 12, repaired muffler.

B. 77., Rambler 4 h.p. G. runabout, 1135 lbs., 2084 marks—Penalized stops, 1; 7 min., 20 sec.; lost split pin. Non-penalized stops, 4; 18 min., 30 sec.; R. R. crossing, recovering goggles, R. R. crossing, puncture. Control repairs, 4; Oct. 9, tightened clutch; Oct. 10, tightened nuts; Oct. 15, new spark plug; Oct. 15, wired rear axle.

A. 79., Oldsmobile 4 h.p. G. runabout, 920 lbs., 1920 marks—Penalized stops, 8; 41 min., 10 sec.; shutting pet cock, leak in water tank, engine quit on hill, bad mixture, new spark plug, vaporizer trouble, vaporizer trouble, gasolene supply all out. Non-penalized stops, 2; 1 min., 20 sec.; blocked traffic, recovering box. Control repairs, 2; Oct. 12, adjusting and cleaning; Oct. 13, adjusting and oiling. Marks lost at controls—overtime in cleaning (excess of two hours), 120.

B. 80., Foster 4 h.p. S. roadster, 1420 lbs., 2880 marks—Penalized stops, 4; 8 min.; lighting pilot, lost pin in brake rod, lighting pilot, new lock-nut screw on engine bearing. Non-penalized stops, 16; 2 hrs., 59 min.; eleven stops for water, two for Nature, two for railroad crossings, one for resetting tire. Control repairs, Oct. 13, fixed brake rod shackle and cylinder oiler; Oct. 14, adjusted cylinder oiler; Oct. 14, adjusted automatic regulator; Oct. 15, adjusted brake. Marks lost at controls—early at Hartford, 5; late at Boston, 8.

Sample Steel Rail Road Finished.

Wednesday afternoon General Roy Stone and Major F. B. Jones arranged a little informal test of the new section of steel road that has just been completed along one block of Murray street, New York., between Broadway and Church street. A two-horse ashcart with a sheet iron hopper body which weighed 3,700 pounds was procured. The horses were unhitched and a rope fastened to the pole. About the middle of the rope a bight was taken about either end of an ice-balance, that would register 500 pounds, so that the amount of the pull would be registered on the balance. The rope was manned by laborers, and Major Jones read the balance.

The cart was a little too wide for the rails, and it was difficult to keep its wheels from binding on the ridged edges of the steel. Once when the wheels bound the cart was started by a pull of 320 pounds. Again 200 pounds started it. It was kept moving over the rails by a pull that varied from 80 to 120 pounds, or an average of 100. Then it was tried pulling the cart astride the rails, so that the wheels ran over the same grade on the granite blocks. The balance would not register what pull was required to start it. It was more than 500 pounds. To keep it moving the pull required varied from 120 to 200 pounds, and the average of 160 pounds is a fair one to put down, for most of the time the indicator hovered about those figures.

As the test demonstrated a lessening of 40 per cent. in the traction by the steel rails, General Stone expressed himself as much gratified. The city officials and Automobile Club officers will be invited to a more formal demonstration to be held later.

Reunion Dinner and Testimonial.

Having raised a fund of $450, the committee appointed by participants in the Reliability Run has purchased a valuable stop watch, and will present it to Secretary S. M. Butler, of the Automobile Club of America, at a reunion dinner to be held at the New York Athletic Club on Dec. 22 at 8 o'clock. W. E. Scarritt will officiate as toastmaster. The tickets for the dinner are $2.50 each, and can be procured by any one interested from C. H. Gillette, 22 Burling Slip, New York.

Recent Incorporations.

Bridgeport, Conn.—Bridgeport Motor Co., with $100,000 capital, to make launch and automobile motors.

Chicago, Ill.—The Standard Motor Vehicle Co., with $1,000,000 capital, to build motors, commercial and pleasure vehicles, heavy trucks and streetcars. The officers are R. W. Lyle, president; Parker H. Sercombe, vice-president, and C. M. Paine, of Milwaukee, secretary and treasurer.

Active Season Planned at Tarrytown.

For the purpose of taking an inventory and making necessary repairs, the plant of the Mobile Co. of America has been closed for a short time. Operations will be resumed on a larger scale as soon as these are completed.

Removed to 43rd Street.

The local agency for the Stevens-Duryea cars, made by the J. Stevens Arms and Tool Co., has been removed from 523 Fifth avenue to 54-56 West Forty-third street.

Every inch of space has been taken at the Madison Square Garden show, which opens on January 17. The total number of exhibitors is 122.

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BACTERIALOGICAL LORE

Ten Families of Microbes That Infest Pneumatic Tires Discovered.

An unexpected enemy of the pneumatic tire has been discovered—no less than ten different kinds of microbes. To M. Michelin belongs the honor of bringing them to light and telling of their nefarious work.

It is harmful, he says, to let wet penetrate a tire. The cotton of which the fabric is made up is quickly attacked by destroying agents when exposed to the wet. Experiments made with various types of cotton placed in damp cellars showed that various growths quickly battened on it, and took away all its strength. Something analogous happens with a tire.

An unattended gash in the outer cover lets the wet penertate to the layer of cotton, and here it works its baneful effects. When in active use there is a chance—though a small one—of the damp being forced out, or of dust or some other drying agent getting in, or of the sun, dry air, or the heat of the tire destroying the moisture. But when a car is laid aside in a damp place for weeks or months the tiny destructors, which may be called tire microbes, can work full time. They may localize in one spot, or find several colonizing grounds as their nature directs for there are about ten different families in the business.

But their work is always thorough. The motorist one fine day takes out his car. There are apparently only a few tiny gashes in the tires, and with no indication of danger about them. But he has not run many miles when one or more of the covers burst. He is surprised at such a big burst taking place, but an examination reveals that the cover is practically ruined.

COMPOUNDED THE ENGINE

And Then it was Quite Ready to Climb the Side of a House.

They had come upon the hill unexpectedly, and there was no reserve of steam to draw upon. Consequently, when the grade became steeper and steeper, until it bore a faint resemblance to the side of a house, the gauge showed a steady and alarming shrinkage. From something over 200 pounds it dropped to about 30. Then the car came so near stopping that the driver threw the lever back, shutting off steam entirely, and applied the brakes as the car came to a stop.

He then dismounted and disappeared under the vehicle. Emerging in about a minute, he remarked:

"Well, I guess we will go up now, all right. She is compound now, and it would take more than a 50 per cent grade to stop us."

And his boast was made good, for upon the journey being resumed the remainder of the hill, which turned out to be steeper than the part already traversed, was scaled, slowly, to be sure, but none the less certainly. Upon reaching the top the engine was changed back to simple again, and no further trouble was experienced.



AN AUTOCAR ON THE BRINK OF A BABBLING BROOK NEAR ARDMORE, PA.

That Important Member, the Clutch.

A most important thing is to keep the clutch free from mud, as this, if it once gets into the leather, is very difficult to get rid of and is a very dirty job. Indeed, when this happens one is very apt to feel inclined to tighten up the clutch until it gets grip. Needless to say, this is a dangerous proceeding. The best thing to do is to wash the leather with gasolene by means of an ordinary paint brush, which, by the way, is a useful thing to carry about in the car, as it comes in handily for many purposes. Fuller's earth, powdered ordinary chalk (not the French variety) or lime should be used to dry up the clutch leather.

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In Sympathy With Movement but Vetoes Bill.

Although returning with his veto the ordinance passed by the Chicago City Council's requiring automobiles to display numbers eight inches high on their backs, Mayor Harrison declared himself to be in favor of the measure.

He said that several months ago representatives of the park boards had conferred with the city on a uniform system of regulations for automobiles, and as the machines used the boulevards as well as the streets, he favored co-operating with the park boards in passing an ordinance applicable to boulevards as well as streets.

The veto was sustained, and the ordinance was sent to the judiciary committee with instructions to send for representatives of the park boards when considering the measure.

Bridgeport Club has Fine Quarters.

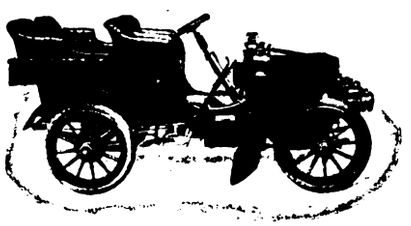
Hereafter the Automobile Club of Bridgeport will make its home in the automobile building recently erected in State street by W. S. Brandegee. At a meeting of the club last week a proposition was made to Brandegee to rent the front room on the second floor of the station, and an offer was made for certain privileges for members. These arrangements were agreed to, and the recommendation that a lease be taken for one year, with the privilege of renewal, was adopted unanimously.

Hereafter club members, by the provision of the contract, will have free storage at the station not exceeding forty-eight hours at a time, and members will secure special rates for monthly storage.

Automobile Railways in France.

A new system of railway communication will be inaugurated in France on June 18, cable dispatches say, consisting of the substitution of automobiles for existing locomotives and cars. Each automobile will be the size of the present corridor carriages, and will accommodate forty passengers and their baggage. Speed will be sixty-one miles an hour. The initial trip will be from Paris to Dijon.

In a four-cylindered engine try and keep the four cylinders running evenly. Keep all the valve springs of the same strength, and see that the tremblers on the coils are evenly adjusted.



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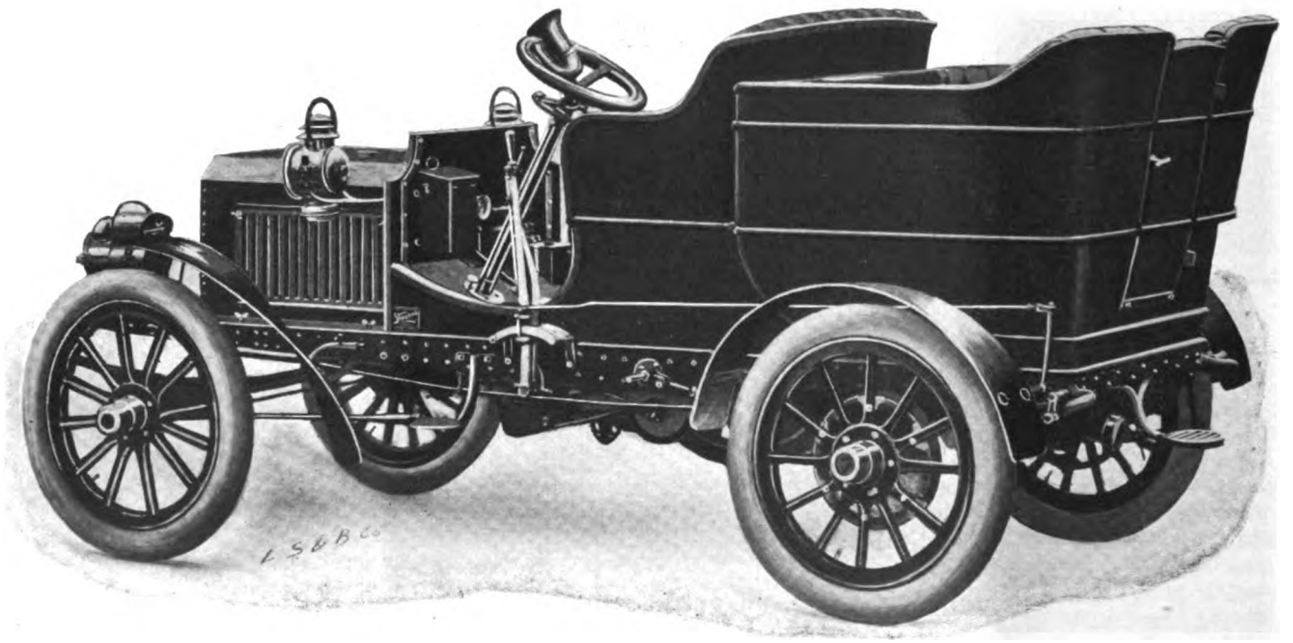
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AN IRISH MUFFLER

Inventor of Dunlop Tire has a Marvellously Effective Device—Its Construction.

There has been considerable curiosity felt as to the construction of the muffler used by J. B. Dunlop, the famous inventor of the Dunlop pneumatic tire, and of late years an ardent autoist. Remarkable results in the way of silencing were known to result from the use of the motor, but details concerning it were not obtainable.

It is now stated that, after experimenting with two mufflers, a third has been produced, with equally good results. The principle is the converse to that of the ordinary organ pipe. The one develops the waves of sound, the other suppresses them.

The muffler consists of a comparatively small cylinder, with a tube running through the middle of it, giving an absolutely clear passageway. In fact, there is no obstruction whatever to the escape of the exhaust gases, and there can be no back pressure. This tube has three openings in its side into the cylindrical chamber, each measuring about ¾ inch broad. The effect of these openings is remarkable. They absolutely suppress all sound, without in any way interfering with the escape of the exhaust gases. This was tested in a simple and effective way by shouting down the central tube and then trying the same experiment with an ordinary tube.

One very strange and interesting result effected by this silencer is the cooling of the exhaust, which Mr. Dunlop ascribes to the absence of friction, which is usual in the case of most silencers. He states that when the hand is held against the orifice the issuing gases are very little warmer than the ordinary air.

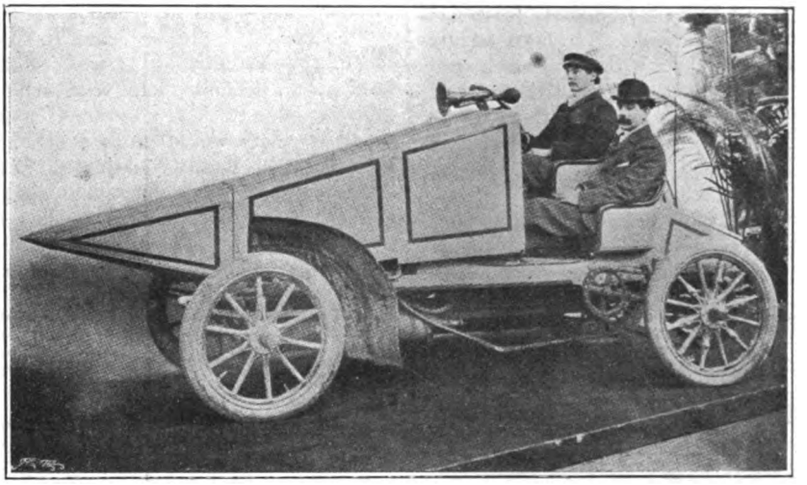
That there is no appreciable back pressure Mr. Dunlop states the following test proves: If the hand is put against the issuing exhaust it will be found that it is ejected in a series of sharp and distinct puffs, whereas in a silencer where there is considerable back pressure the exhaust gases are squeezed out, so to speak, and come out in a more or less regular stream.

What is Shown at Paris.

The present Paris show is the fifth of its kind, the first having been held in 1898. It will continue for fifteen days.

The show embraces sixteen classes of exhibits, which are kept strictly separate, so as to permit visitors readily to give special attention to those branches in which they are most directly interested. The admission is set at one franc, except on Wednesday, when it is three francs. The sum of five francs is charged on special days. Following are the classes of exhibits:

1. Complete automobiles of all descriptions, including motorcycles, exhibited by manufacturers only. An exception is allowed in the case of exclusive representatives of some foreign (non-French) machine, who are admitted in this class if they agree to exhibit only the one type which they represent.
2. Cycles of all kinds.
3. Construction material and tools used in manufacture of automobiles, bicycles, etc.
4. Tires for motor vehicles and cycles.
5. Chassis (running gear and frames).
6. Component parts and accessories.
7. Motors for automobiles and boats, storage batteries.
8. Automobile trade. This class is reserved for dealers exhibiting vehicles handled by them.
9. Navigation.
10. Aeronautics.
11. Applications of denaturized alcohol.
12. Divers sports and touring.



AN ENGLISH IDEA IN RACING CARS.

13. Carriage body work for automobiles.
14. Dress and equipments for automobilists, cyclists and tourists.
15. Invitations and sundry matters pertaining to automobiles, cycles and sports.
16. Bibliography, photography, maps, periodicals.

When to Use the Sprag.

If there is any doubt about the holding power of the brakes, and a sprag is depended upon to avert accident in case of their failure, care should be taken to use it properly. In ascending a hill the sprag should be dropped at the beginning; then it becomes automatic, and if the chain should break the sprag digs into the ground the instant the car stops. Before it has time to acquire speed backward the sprag will be "biting" hard enough to hold the car. On the other hand, if the sprag is not dropped until the stoppage has taken place and the backward movement commenced, it will take a stouter bar of steel than is usually made into a sprag to bring the car up standing.

SARTORIAL ADORNMENT

How Conventional Costumes are Replacing the Outre' Ones of the Past.

The abandonment of conventional automobile toggery is becoming more and more common. A few days ago, when the thermometer was at the freezing point, a well-known New Yorker was seen out in his own tonneau car in company with another man and two young women. The men wore derbies and ordinary walking attire and the women were similarly clad. The most striking feature of the party was the big hats which the women wore, trimmed with white plumes and other delicate material, which is easily torn or soiled.

It seems to be getting to be something of a fad for automobilists to show familiarity with, or contempt for, automobiling by hopping into a car and going for a run in any sort of dress. But is this really smart, in good taste, or wise? The same persons would not tolerate the thought of going out for a saddle ride unless clad in the full equestrian regulation costume, nor would they go for a drive behind a horse unless properly dressed for it.

Mask, goggles, leather cap and coat are not necessary always, but derbies and feather-trimmed hats and walking suits are ridiculous in an automobile. Some enthusiastic motorist with a talent for dress can make a hit and confer a benefit by devising some sensible, distinguishing and readily donned and doffed dress for automobilists.

Prowlers Make Their Appearance.

"Prowlers," in the shape of bicycle policemen, dressed in plain clothes and otherwise stripped of every vestige of their calling, are the latest. They are to be turned loose on Pelham avenue, leading out of this city to the northeast, and bidden to make miserable the lives of automobilists traversing that road.

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MECHANICS ARE MADE

Users of Automobiles Acquire Technical Knowledge Almost Without Knowing it.

While a Motor World man was sitting in the office of one of the largest selling and storage establishments in New York City one of the hands came in with a part from a machine of foreign make to ask what he should charge Mr. So-and-so for fitting a new shifting sleeve in it. A considerable discussion ensued, in which the difficulties of the job were explained, and it came out that the chauffeur and utility man was to make the needed part himself and fit it. After the price had been fixed and the man had left the office the manager turned to his visitor and said:

"Did you ever pause to think seriously of how much the automobile is doing in the way of spreading mechanical learning? Now, that man, when he came here, hardly knew enough to run an electric coach, but you heard how glib he was about that job. He has a very indifferent education, yet he knows more about the practical end of that job than I do. He had me going for a while, and I'm a mechanical engineer.

"We have half a dozen men like that with us—self-educated mechanics, and, so far as automobiles go, you might almost call them experts. After learning for themselves they teach others, and the mechanical information of the working man in this country has a much higher average than it had five years ago. Once they get a smattering of it, they go right ahead and do not stop at automobiles. They might not be able to pass a written technical examination, but there are a lot of men now in this business who in a plant could prove themselves to be very practical mechanical engineers.

"Think, too, of what has been going on among business men and men of wealth and leisure. Some of them, although college bred, never knew any more about mechanics than enough to use a corkscrew, but since they became automobile owners, look at them, with black hands and torn fingernails from tinkering their own machines. And don't you think that they are bunglers, either. There are a couple of men worth their millions who store their machines with us, who are as handy at making a repair on the road and improvising a makeshift as the foreman of a shop.

"Of course, the bicycle began it. You can recall how astonishing it was to discover how many persons there were who didn't know enough to use a wrench; how hundreds of riders would go to a bicycle store to have their bearings adjusted, and even to have their handlebars and seat posts changed. The early riders learned all the tricks, and they became dealers and repair men. Next they took to building their own bicycles, and a few to sell, until it got so that some of the best machines you could buy were made in small shops. We have some of that sort of men with us now; in fact, the automobile business has been very largely recruited from the ranks of such, as you know.

"I suppose, too, that many of the genteel and wealthy owners who are practical operators of machines began their education by tinkering with their bicycles. They, like the chauffeurs and the men who are repairing machines in the garages, have had only a practical course in the school of experience and experiment. That is the best kind, too, even if it is not as thorough as the curriculum of a college. The whole course of education begins with the proper handling of a screwdriver and a wrench, but the automobile has carried it along until there are thousands who are now able to grasp a mechanical proposition and solve the workings of a machine that would have completely 'stumped' them a few years ago. The automobile is making the whole nation to a certain extent mechanical. This is more true here than abroad, because of the American inquisitiveness and pertinacity in trying to learn about new things which it does not understand. Not but what there is still a lot of dense ignorance regarding automobile engines and driving gears, but the learning that has been spread among the unmechanical and crudely educated as well as the uninformed men of culture is amazing."

Dealers Can Control the Business

in their towns when they handle

The Spaulding

It puts money in your pocket and leaves more in those of your customers' than any automobile you can sell them. You are both happy.

Happiness is catching; that's why SPAULDING owners have lots of friends who increase the demand.



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Darracq passengers did not have to walk.
The cars climbed all hills, including Foster and Spencer "Terrors."
Darracq Cars hold more records than any other make in the world.

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HIGHEST AWARD.
Prescott Steam Carriages
NEVER BURN OUT BOILER
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Look before you buy. See report of New York-Boston Run.
AGENTS ASSIGNED IN UNOCCUPIED TERRITORY.
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AMERICAN COIL COMPANY
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Foreign View of Automobile Legislation.

Here is one reflection of what we are "as others see us," taken from The Car, of London:

"Legislation dealing with the automobile in America is entirely chaotic, as several States, including New York, Connecticut and Massachusetts, have passed different laws regulating automobile traffic. All are curious examples of prejudice, ignorance and impracticability. In some towns motor drivers appear to be compelled to adopt about the speed at which a smart young nurse would wheel a child's perambulator along the footway of one of our London suburbs. It is, of course, not very surprising that ignorant aldermen and councillors, excited by newspaper diatribes, and absolute 'greenhorns' in regard to automobiles and their mechanism, should frame such absurd enactments, while their notions as to locomotion limits are often quite grotesque. The idea of restricting the speed of motors to those which a pedestrian walking rapidly, or a donkey when trotting, could easily exceed, is manifestly absurd. Yet these are the sort of ridiculous limits that have been imposed in certain of the American towns where aldermen and corporations have been influenced by the 'fee-faw-fum' stories in the daily press."

Wheels That Adhere to the Road.

A factory has been rented in Nashua, N. H., by H. T. Stillman, in which to manufacture a new type of automobile wheels, which differ in many respects from those now in use. The wheels are so made that they adhere to tracks in slushy weather and also reduce materially the cost of building tracks. They are adapted for use on automobile, storage battery carriages or streetcars. The wheels are now in use on one of the lines in Fifth avenue, in New York.



THE AUTOGAS DRY BATTERIES.
80 per cent. more efficiency than any other.
Standard Everywhere.
WM. ROCHE, 42 Vesey St., New York.

WOOD WHEELS
Artillery or Compress Band.
W. K. PRUDDEN & CO.,
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Over 100 miles on one charge over city streets.
The most powerful *Electric* RUNABOUT on the market.
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Catalogue upon application.
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ARE ALWAYS RELIABLE
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The makers of the WINTON have decided to equip ALL THEIR CARS with Diamond Chains.
FEDERAL MANUFACTURING COMPANY
DIAMOND CHAIN FACTORY — Indianapolis


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The Week's Patents.

715,302. Steering-gear for motor-carriages. Henry A. Schryver and Fred C. March, Warren, Ohio. Filed March 8, 1902. Serial No. 97,292. (No model.)

Claim.—1. In a steering mechanism, a steering-shaft, steering-wheels, and intermediate mechanism connected to said shaft and wheels, the rotation of said shafe from its normal position to a definite point producing retarded angular movement of the steering-wheels.

715,305. Pneumatic tire. Edward H. Sedcon, Brooklands, England. Filed April 15, 1901. Serial No. 59,929. (No model.)

Claim.—1. In a pneumatic tire the combination of a tubular cover divided on its outer periphery and formed with lateral dovetail projections at the edges, a detachable tread part adapted to fit over said dovetail edges and having metal dovetail clips embedded in the india rubber of said tread part and faced with canvas and arranged transversely at a short distance apart from each other.

715,361. Elastic tire for vehicles. Henry H. Durr, New York, N. Y. Filed July 25, 1902. Serial No. 116,945. (No model.)

Claim.—1. The combination of a hollow metallic rim, a tire having elastic sections and a flexible and non-frangible base composed of alternating layers of fibrous material and rubber, the whole being molded and vulcanized into an integral structure, transverse clamping-bars located on the web of the tire between its sections and which extend substantially from side to side of the tire and a bolt or bolts for securing the clamping-bars, for the purpose set forth.

715,411. Running-gear for automobiles. Charles E. Neal, New York, N. Y. Filed December 24, 1901. Serial No. 87,117. (No model.)

Claim.—In a running-gear mechanism for automobiles, the combination consisting of a motor K; motor-shaft D'; clutch member L; bearing E2; supported beneath the mobile-frame; shaft D; bearing E E; universal joints F F; clutch member L'; constructed to move back and forth on shaft D, through sleeve M, and to revolve with said shaft D; c ilspring H, on shaft D, operating against bearing E, and sleeve M, to throw the clutch member L, into operative connection with member L on shaft D; gear C; on shaft D, and gear C, on axle-carrying wheels B; mechanism substantially as specified, for operating the friction-clutch, consisting of lever R, mounted upon shaft Q, running crosswise beneath the automobile-frame, and supported in bearings Q; forked lever P, located on shaft Q, at its outer end; sleeve M; collar M; and pins O; mechanism for operating brakes, consisting of lever S, on shaft Q, arm S, and lever S2, on pipe T; pipe T operating in bearings T T crosswise of the automobile-frame A, and supported beneath it, and arranged t operate brake-bands W, on wheels B, by means of a connecting cord; all constructed, arranged and combined to operate substantially as and for the purposes hereinbefore specified.

715,412. Storage battery. Leonard Paget, New York, N. Y., assignor, by mesne assignments, to Charles Coster, New York, N. Y. Filed September 8, 1899. Serial No. 729,836. (Specimens.)

Claim.—1. A storage battery having an absorbent material for the electrolyte consisting of silicated tufa.

2. A storage battery in which sulphric acid forms the electrolyte of the battery and is contained in a body of silicated tufa.

715,430. Detachable pneumatic tire. Frank A. Seiberling, Akron, Ohio. Filed March 12, 1902. Serial No. 97,855. (No model.)

Claim.—1. The herein-described tire of the class specified which consists of an endless inner tube, an outer envelope, severed longitudinally on one side, in combination with a metallic concave rim, a U-shaped outwardly-open metallic trough with outwardly and downwardly turned sides, with its base secured lengthwise of said rim, and binding-rings, wedge-shaped in section resting between said rim and envelope, and means for contracting said rings, substantially as shown and described.

715,559. Motor engine. David A. Decrow, Lockport, N. Y., assignor of one-half to the H lly Manufacturing Company, Lockport, N. Y., a corporation of New York. Filed October 19, 1900. Serial No. 33,540. (No model.)

Claim.—1. In a vertical motor-engine, the combination of an elongated upright frame structure, a crank-shaft supported at or near the base thereof and provided with a crank, cross-head guides disposed on said frame adjacent to said crank-shaft, a motor-cylinder disposed on said frame high above said crank-shaft, a low cross-head adapted to slide on said guides near the base, a relatively short connecting-rod between said low cr ss-head and crank, and an elongated piston-rod connecting the piston of the motor-cylider with the cross-head.

715,562. Drive-chain. James M. Dodge, Philadelphia, Pa., assignor to the Link Belt Engineering Co., Philadelphia, Pa., a corporation of Pennsylvania. Filed October 10, 1901. Serial No. 78,205. (No model.)

Claim.—1. In a driving-gear, the combination of a sprocket-wheel having a series of platforms on its periphery and recessed between the platforms to form driving-teeth, a chain made up of a series of links pivoted together, said pivots resting upon the platf rms of the wheel, and having intermediate driving members resting in the recesses between the platforms and driven by one series of teeth formed by the recesses, substantially as described.

715,593. Wheel. Fred Lyon, Ithaca, N. Y., assignor of one-half to William J. Romer, Ithaca, N. Y. Filed May 28, 1902. Serial No. 109,282. (No model.)

Claim.—1. In combination with a rim and tire, oppositely-arranged rocking clamping-jaws fulcrumed in the rim and engaging the inner and side faces of the tire and means for engaging the jaws and rim simultaneously rocking the jaws to engage the tire.

715,595. Driving mechanism for vehicles. Lars G. Nilson, New York, N. Y., assignor to Siegfried M. Fischer and Harry S. Fischer, New York, N. Y., and Huldah Anderson, Des Moines, Iowa. Filed May 14, 1902. Serial No. 107,242. (No model.)

Claim.—In a driving mechanism for vehicles, an axle, elongated hubs mounted to rotate on the axle, bearings for said hubs, springs supported by the bearings, gear-wheels attached to the hubs at the inner sides of the springs, independent motors having swinging connections with the axle at the inner ends of the hubs, pinions on the motor-shafts and engaging with said gear-wheels, casings inclosing the gear-wheels and pinions, and a frame connecting the two motor-casings and in which the inner ends of the motor-shafts have bearings.

715,670. Automobile-crane. Moses W. Kouns, Washington Court-House, Ohio. Filed September 13, 1902. Serial No. 123,239. (No model.)

Claim.—1. A motor-vehicle for ordinary roads, comprising a load-platform, driving and steering wheels on which said platform is supported, a crane mounted on said platform, a motor, and means for connecting said motor at will either with the driving-wheels or with the hoisting mechanism of the crane, substantially as described.

715,725. Multiple-cylinder engine. Lewis C. Worron and Abraham Vanderbeek, Hartford, Conn., assignors to said Vanderbeek. Filed October 12, 1898. Renewed July 30, 1902. Serial No. 117,693. (No model.)

Claim.—1. A circular group of cylinders and pistons within the same and connecting-rods, in combination with the main shaft and crank connection thereon, a crank-pin and crank-pin-head connection between the crank of the main shaft and the connecting-rods of the pistons, a trunnion-frame having trunnions at its ends and mortised for the passage of the crank-pin, a pin passing through the crank-pin at right angles to said trunnions and having projecting ends passing into bearings or bosses on the trunnion-frame, substantially as specified.

715,094. Automatic Pump for Pneumatic Tires. Charles S. Langton, Parkersburg, Ill. Filed December 26, 1901. Serial No. 87,206. (No model.)

Claim.—1. The combination with a wheel having a pneumatic tire mounted thereon, of a pump for inflating the tire, a U-shaped slide-link having the pump-piston connected therewith, levers adapted to be operated by the tire, and means connecting the levers and slide-link whereby the pump-piston may be reciprocated.

The Value of Kerosene Taps.

If your car is unprovided with means by which kerosene can be injected into the cylinder, and the latter is not fitted with a compression tap, it is a good idea to have a kerosene pump lubricator fitted to the dashboard with a delivery pipe, or, in the case of multiple cylinder forked delivery pipes to the lubricating pipes, as close to the entrance of the latter to the cylinder as possible. The cylinder oil pipes must be provided with cocks just above the junction of the kerosene pipes, so that by turning off these before you do your kerosene pumping on coming in from your run, the latter oil is not forced back, as it may be, into the cylinder oil tank. Above all, do not forget to turn these added lubricating oil cocks on directly after you have flushed with kerosone. Forgetfulness in this particular may mean seizing, with all its horrors.

If a Brooklyn paper is to be believed, the cost of falling into the police traps in Suffolk County, Long Island, is now but $25, as against $50, the former penalty. District Attorney Livingston Smith has even issued a circular stating that the rate has been cut.

STEARNS CARS ARE WORTH MORE THAN THEY COST.

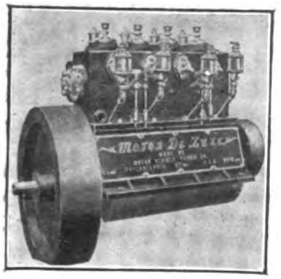
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SIZE, WORKMANSHIP and FINISH

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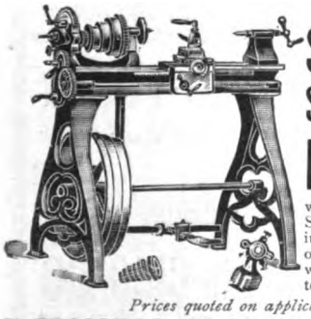
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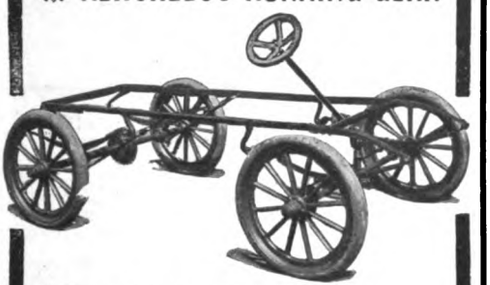
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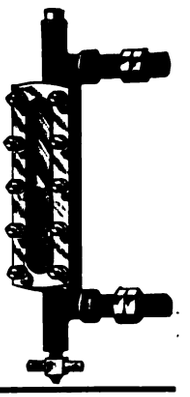
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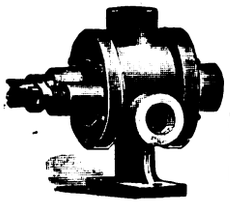
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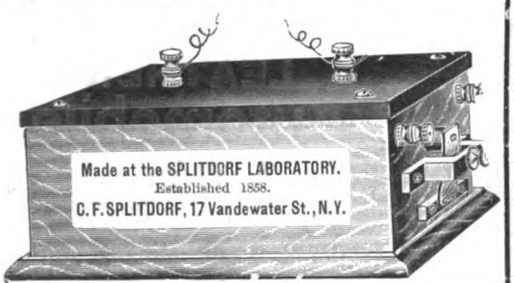
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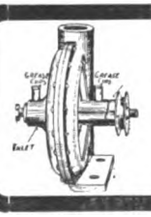
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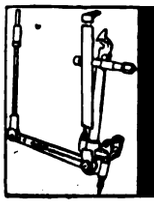
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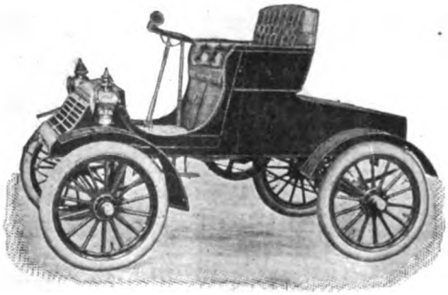
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Do not purchase until you have seen the NEW

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AT THE

New York Automobile Show.

If you cannot attend the Show, write to us for information regarding our TYPE VII.

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Suite 553, North American Bldg., PHILADELPHIA, U.S.A.

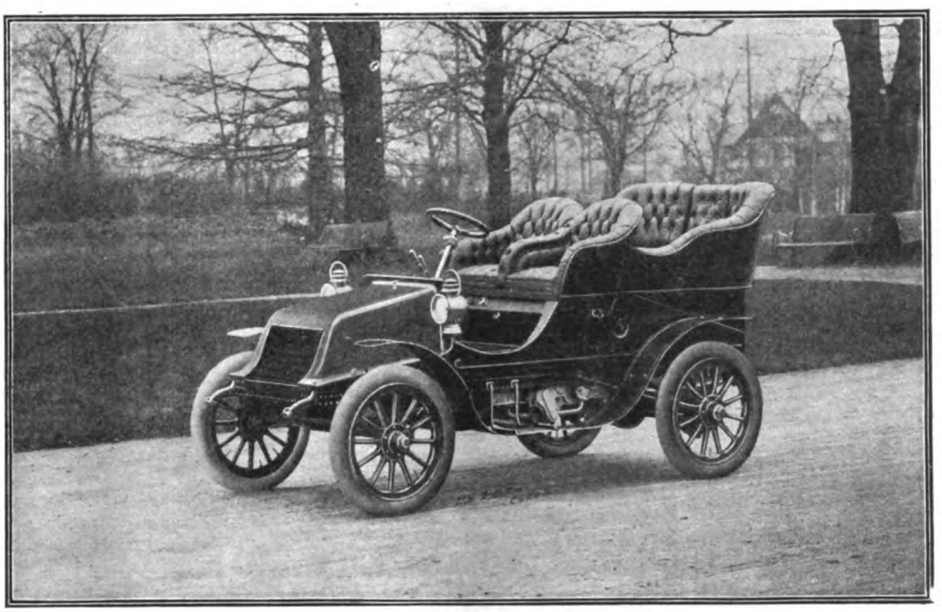
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Our new 20-horse power model represents more advantages than any other high-grade car manufactured or sold in America.

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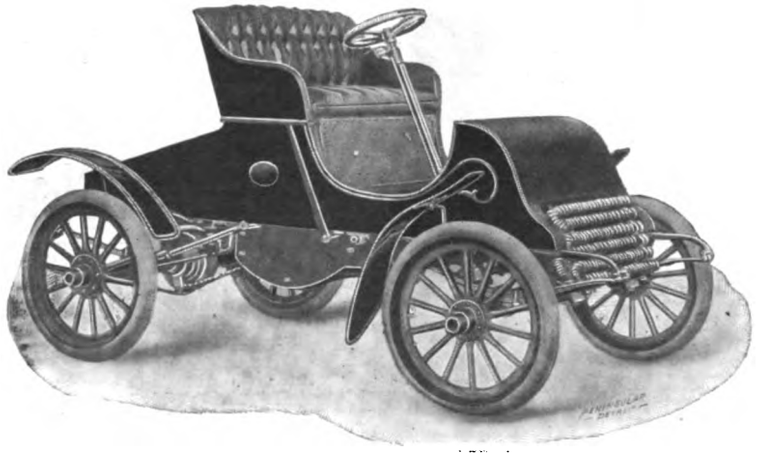
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Early Orders are Necessary

If you desire to possess a

..CADILLAC..



A look ought to tell you why

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The agent who doesn't secure it NOW, is apt to hie himself to the woodshed a little later, and gently kick himself all over the place.

Will you be one of the unfortunates? Now is the time to decide.

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THE ELECTRIC STORAGE BATTERY CO.

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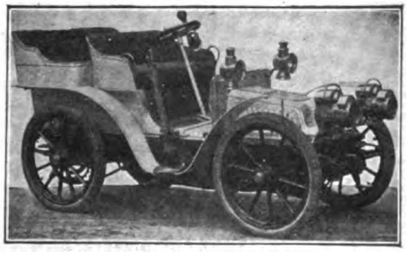
PHILADELPHIA, Allegheny Ave. and 19th St. NEW YORK, 100 Broadway. BOSTON, 60 State St.
CHICAGO, Marquette Building. BALTIMORE, Continental Trust Building, CLEVELAND, New England Building.
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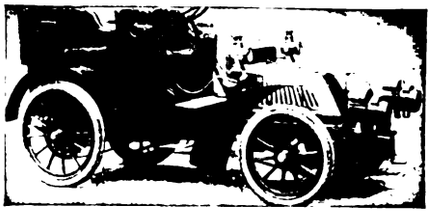
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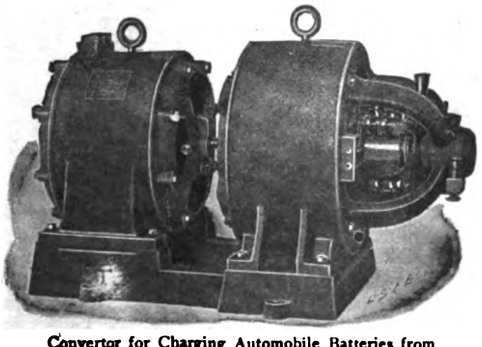
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ALL KINDS OF FRENCH AUTOMOBILE PARTS KEPT IN STOCK.

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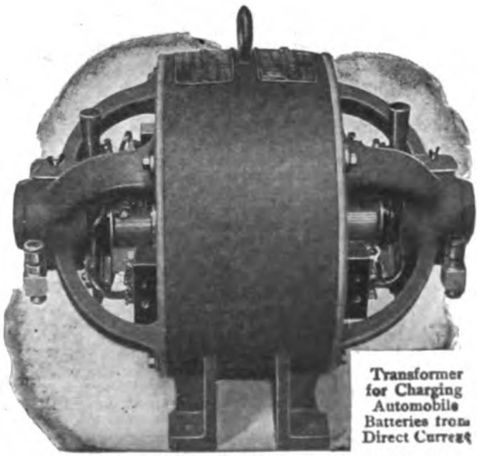
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Our machine is the **MOST EFFICIENT and PRACTICAL OF THEM ALL**—as demonstrated by hundreds of them in daily use all over the country.



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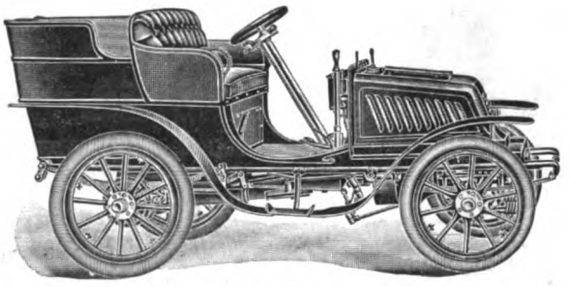
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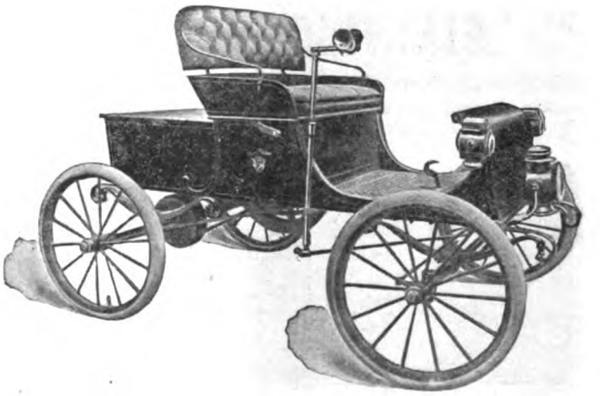
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The Spaulding

It puts money in your pocket and leaves more in those of your customers' than any automobile you can sell them.. You are both happy.

Happiness is catching; that's why SPAULDING owners have lots of friends who increase the demand.



$700 THE PRICE. QUICK SALES THE RESULT.

YOU WANT TO KNOW MORE. WE WANT TO TELL YOU MORE. WRITE US RIGHT NOW.

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GOODRICH Clincher Automobile Tires

THE ORIGINAL AMERICAN CLINCHER

Our construction, our pattern and our style of rim are recognized as the standard by all licensed makers of clincher tires.

A pattern for other manufacturers.

A model automobile tire.

All repairs or adjustments made at the following branches, which carry a full and complete line of standard sizes of tires and parts constantly on hand:

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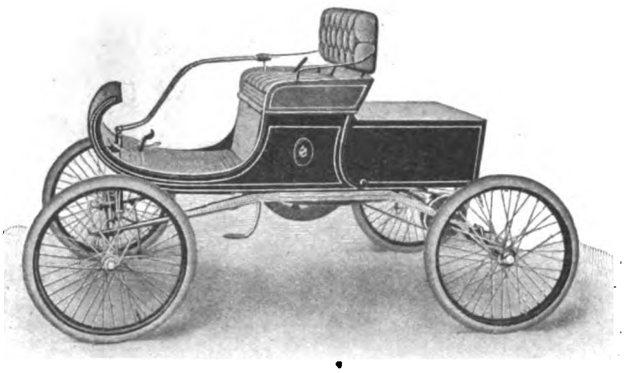
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"GOES."

This is the time of year the horses are "turned out"—some of the Automobiles are stored in winter quarters, but the useful OLDSMOBILE still keeps "on the go." All roads are alike and all seasons the same to "The Best Thing on Wheels."

PRICE, $650.00.

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C. H. Johnson, Atlanta, Ga.
Sutcliffe & Co., Louisville, Ky.
Brown-Thompson & Co., Hartford, Conn.
Mason's Carriage Works, Davenport, Ia
Adams & Hart, Grand Rapids, Mich.
Kline Cycle & Auto Co., Harrisburg, Pa.
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Agency for Great Britain: THE OLDSMOBILE COMPANY OF GREAT BRITAIN, 100c Queen Victoria St., LONDON, E. C.

WRITE FOR ILLUSTRATED BOOK TO

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, December 25, 1902. No. 13

DISPLEASED WITH RESULT

Reliability Runs are Empty, Says This Critic, who Suggests an "All Round Championship."

"The reliability book? Oh, yes, I have one. But, tell me, now, what good did it all do to us, the manufacturers?" It was the chief representative of a very prominent maker who spoke. He continued: "I can't see where it has been of any direct benefit to any one. There was not enough about it that was tangible for the general public, and that is what we are after. We are not catering to the enthusiasts. We have them. The general public does not know any more which machine stood the racket best than it did before the reliability run. All it knows is that certain machines got in first, but that a lot of different ones got prizes and all got certificates. It has a confused idea that we were racing for points on some kind of a complicated plan that it does not understand.

"I do not mean to be narrow when I ask what good it has done, for I know very well that the run was a great boon for the industry as a whole, and that the public estimation of the reliability of American machines was elevated by it, but it has not really helped any one to sell machines. I suppose at the show there will be sixty-five first class certificates displayed, and what good will they do? The public will be more confused than ever. I did not take the run seriously, and I am glad I didn't. If I had I think I would feel very sore now.

"What we want is some kind of a contest that will be decisive of something, will settle the question of speed or endurance or controllability or whatever it may be; something run in a way that will enable the public to put its finger on some certain machine and say: 'This is the best.'

"The idea of the English club to have a run of 1,000 miles with no stops that are not penalized is a better one than ours. Of course, there is luck in the matter of punctures and railroad crossings, but all start with the same chances to take. The matter of allowing for hats blowing off and dropping things is a direct bid for faking. It may be all right to allow a certain few minutes for cleaning and oiling up, but what a simple matter it is for a man to slip in a bolt or two or fix some part while simply oiling up? Yes, it's better to take off a mark for every stop and every minute of attention given to the machine, and let it be seen who can lose the fewest marks. Then there will be more to the test; but it won't be wholly satisfactory even then. Why couldn't we have a competition on the plan followed in athletics? We could, I think, have a series of contests extending through from spring to fall. A speed test, a hill climb, a fuel test, an endurance test, a real one, and a few other sorts of tests. Points should be allotted for each different contest, and the best one at each game could be picked by the number of points won in the individual contest, while at the end of the season the all around champion could be selected by the total number of points won in all the contests."

Alters Name; Adds Gasolene.

An important step is about to be taken by the National Vehicle Co. of Indianapolis, Ind. They are preparing to place on the market a line of gasolene cars, which will be sold under the name of the National. The company's National electric vehicles will, of course, be manufactured and sold as in the past.

A change of title is also announced. Beginning with January 1 the National Motor Vehicle Co. will be the new name of the present company. The change, which is, of course, one of name only, is taken to avoid the confusion arising from the existence of several concerns bearing the word "National" in their official titles.

Is Fisk's Own Tire.

Because of there having been recently granted a license to manufacture tires under the G. & J. patents, the impression has gained considerable currency that the new Fisk detachable tire is made under that grant. This, however, is not the case. The Fisk tire differs entirely from the G. & J. principle, air pressure not being necessary to hold it in the rim, and is made under a patent covering eight broad claims and owned and controlled absolutely by the Fisk Rubber Company.

RAINIER WILL BUILD

First Structure Designed Specially for Automobiles to be Reared on Upper Broadway.

Ground has been broken for the first building to be planned and erected in New York City exclusively for automobiles. It is a matter of no little interest that the concern to project and execute this departure is one that has made very little noise and yet has been "sawing wood" in great style on a sawbuck which other makers have passed by—the commercial draught vehicle. It is The Rainier Company, selling agents for the Vehicle Equipment Company, that is to have this first specially constructed building.

It will be at the corner of Broadway and Fiftieth street, and will be four stories high above the basement, with an elevator for vehicles, and every floor built to sustain the weight of as many as it will hold. The Rainier Company has taken the agency of the Berg Automobile Company, and in the new place will have showrooms and executive offices for the full line of Bergs and the output of the Vehicle Equipment Company.

An extensive garage also will be conducted, but pleasure vehicles only will be stored, all trucks and delivery wagons must be stored at the station the company now has on Twenty-seventh street, near Seventh avenue. There an extra building, the same size as the present one, 100x100, has just been leased, in order to extend the facilities to just double what they are there now.

Speaking of the new establishment on Broadway, Mr. Rainier said to a Motor World man:

"We intend to have the finest place of the sort in this country. We will have the best repair department, the best charging plant, and every up-to-date appliance that can be devised. There will be a special waiting room for women and attendants enough to give prompt service to every one. We will cater to the best classes, do the best work, and, if it is a matter of interest to you, we will charge the best prices."

The new building will have a frontage of 100 feet on Broadway and run back 500 feet on Fiftieth street.

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A "MERCEDES SHOW"

The Advance Verdict of the Paris Function and the Reasons for It—Trend of Trade Outlined.

French Bureau Motor World.
2 Rue d'Abbeville.

Paris, Dec. 9.—That the fifth annual Automobile Show, which opens to-morrow in the presence of the President of the Republic, is going to be one of the biggest things yet held no one would venture to express a doubt. Everything points to its being a splendid manifestation of motor vehicle progress, and an object lesson in the enormous development which has taken place in automobile manufacture, not only in France, but also in other countries in Europe and America. The demands for space have far exceeded those on any previous occasion, and when drawing for sites even some of the leading firms have been obliged to accept with as good grace as possible the indifferent positions which chance has allotted to them. A great number of new makers have entered the industry during the last year. New factories are springing up in all directions, and now that the ranks of manufacturers are swelling steadily the old firms find it necessary to fight to maintain their lead. It is not that the supply is outstripping the demand—far from it—but the public will only have the best, and thus manufacturers are striving not so much to turn out more than others, but to produce something better.

It is this which gives so much interest to the show. And the interest is further increased by the competition of foreign makers, who, after being so long under the tutelage of France, think that they are now able to look after themselves, and are showing their independence by boldly sending their cars for comparison with the best that France can turn out. For the first time the show will be thoroughly international, in the sense that it will include vehicles from all countries—America, England, Belgium, Germany, Austria and Italy—but whether these exhibits will be representative has yet to be seen. The only foreign makers of importance abstaining are the Daimler Motor Works, of Cannstatt, and this seems to be due solely to the fact that the 1903 cars are not yet ready and will not make their first appearance before the meeting at Nice.

We said just now that makers are striving less after quantity than quality. But this needs some reservation. The cars are undergoing such changes from year to year, and even from month to month, and orders are so numerous, that manufacturers find it necessary to execute them as rapidly as possible before they lose the first bloom of fashion. In these days buyers will not wait six months, a year and even eighteen months for cars, as they did in the earlier days of the industry. There are now so many firms in the trade that if they cannot get what they want from one they will go to another. The progressive maker has therefore to lay himself out to supply all that is wanted and get out one series of cars before he is ready to start upon the construction of new models. Factories are thus being extended in all directions, and during the last six months several have doubled their productive capacity. These are fine times for the machine tool makers, who have shipped enormous quantities of machines to this country, and yet the demand can be said to have only just begun. There are probably half a dozen makers on this side who during 1903 will be turning out one car a day, and when it is remembered what a vast amount of work is



BIRDSEYE VIEW OF THE PARIS SHOW.

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put into a single vehicle—each taking six months to construct—some idea will be obtained of the importance of these plants.

Competition is spurring makers on to new improvements, and the drawing offices are kept perpetually at work on new designs. It cannot be said that the improvements mean in all cases a simplification and increased efficiency of the mechanism, because if this were so we should very soon see the development of an ideal type of motor vehicle. The improvements rather converge toward conventional types, which become a fashion, and fashion has taken so firm a hold of the automobile that very few firms can afford to strike out on original lines except in a tentative way. It is true that fashion is usually to be commended for its excellent judgment; and, in fact, it can hardly go wrong because it simply fixes upon the type of car that pleases it best, and makers have perforce to dissect the vehicle and copy the features which have secured for it the favor of the public.

The vehicle which is held up for imitation this year is the Mercedes, and the Paris exhibition is becoming generally known as a Mercedes show. The secret of the success of the German car is its silent running and elasticity of engine power and the way in which the motor can be slowed down to, say, 200 revolutions a minute. This is undoubtedly a great point in the eyes of the public. They have had enough of noisy automobiles which rattle and pulsate when it is necessary to stop the vehicles. So long as they were led to believe that a gasolene car was necessarily noisy they put up with it because they thought that nothing better could be obtained, but when the Mercedes came and showed that a vehicle could be not only efficient, but silent, they insisted upon silence as a valuable attribute to an automobile. The thing could be done and must be done, and thus the French makers in a body began to dissect the Mercedes and adopt its constructional features.

If the Mercedes is silent it is due largely to the mechanically operated inlet valve. Therefore the mechanical inlet valve is being adopted by nearly all the French manufacturers and all the motors have been redesigned to this effect, so that the engines at the Paris show will be entirely different from those seen at previous exhibitions. The following is the description of a typical up to date motor: The cylinders are cast in pairs, and the cranks are set in pairs at 180 degrees. The exhaust and inlet valves are on each side of the motor. They are of the same dimensions and are interchangeable. Each valve is closed by a small independent dog instead of the one big dog which formerly went across the top of the motor and closed down a pair of valve chambers. Half time cam shafts, inclosed in casings, are driven from the engine shaft for operating the valves on each side. The motor is throttled automatically and by hand by a throttle valve either in the induction valve or on the carburetter, the latter being the system most generally employed. Except Panhard et Levassor and Charron, Girardotaet Voigt we are not aware of any firm using steel cylinders, though possibly we may see some exhibited at the show. In big motors steel cylinders can only, of course, be bored and turned out of a solid piece of steel, which is a very costly operation, and their price is necessarily considerably more than that of cast cylinders, but owing to their lightness and freedom from flaws they are likely to become a valuable feature in the expensive cars. Charron, Girardot et Voigt have been experimenting with steel cylinder motors on their racing vehicles during the last year, and they are so well satisfied with the behavior of these engines that they are to be fitted to all the 1903 carriages.

There is naturally a good deal of controversy as to the merits of the mechanical induction valve. Apart from the facility it offers for slowing down the engine, it appears to possess no decided advantage, and, moreover, necessitates an extra cam shaft and valve gear. Some makers, therefore, hope to attain the same end with automatic valves by improvements to the carburetter, and the most interesting development in this direction is the carburetter which has been invented by Commandant Krebs, the technical director of Panhard et Levassor. In this device the gasolene is sucked in through the spray nipple by a piston of which the rod is connected with the engine governor. The travel of the piston varies according to the speed of the motor, and more or less gasolene is drawn in. But where the device becomes interesting is the method adopted for regulating the admission of air so that the mixture will always be the same whatever may be the speed of the engine. There are two air inlets, one admitting a fixed quantity proportionate to the spirit when the motor is running slow, and another consisting of ports which are opened and closed by a second piston actuated by the suction of the piston driven from the governor. The second piston is kept up by a spring to close the air ports, and as the suction increases it is drawn down and the ports are opened more or less according to the increasing quantity of gasolene drawn into the mixing chamber. Thus the mixture is always the same, and the engine will run as slowly as required, at the same time that its efficiency is increased by the fact that the gas is always of the same quality. There is undoubtedly a great deal to be done in the way of designing carburetters on these lines.

Another prominent feature of the Paris show will be the steel underframe stamped out of steel plate U section and tapering toward the ends. The usual armored wood frame is still employed for the lighter vehicles, but on the cars of 20 horsepower and more the steel underframe is becoming general. Its advantages over the wood frame are greater strength and stiffness, and in some cases it is claimed to be lighter, while it is probable that the cost is also less. The greater strength and rigidity, moreover, enables makers to suppress the secondary frame to which the engine is usually bolted. This is at present only done in a few cases, but if those makers who are bolting their motors to the main side members find that the result is satisfactory there is no reason why the system should not become general, for the suppression of the secondary frame undoubtedly means increased lightness. In the way of transmission gears the universal jointed shaft is being almost universally employed on the light carriages, and in change speed gears every one is adopting the direct drive on the top speed. These are the main tendencies of automobile construction, and they will be dealt with more fully in our report of the show.

Harkness to Build a Special Car.

One of those little birds who sometimes carry secrets has been flying ahound chirping a story to the effect that the car which H. S. Harkess expects to have represent the Automobile Club in the contest for the Bennett Cup, will be one especially built under his supervision in a private machine shop. It will follow closely the construction of the Mercedes, sings the bird, but then what he sings has occasionally been found to be untrue.

Wheels Replace Levers on Electrics

The Vehicle Equipment Company was the first to recognize the inadequacy of the lever on a carriage so heavy as a loaded brougham, and a couple of weeks ago the first of a new output of wheel steering broughams was sent out from its shops. They found ready sale. Now the Electric Vehicle Company and the first of its new wheel steering broughams has been purchased by William C. Whitney.

New York's Newest Firm.

The latest concern to launch its craft on the metropolitan sea with motors set for sails, is that of Fickling & Fulton, two novices, but enterprising young business men who have opened at 248 West Fifty-fourth street. They have storage facilities for eight or ten machines, and a repair shop on the second floor is conducted by C. F. Keuerleber.

Peerless Adds 12,000 Feet.

Although the two additions to the plant of the Peerless Motor Car Co., Cleveland, O., are now completed, adding over 12,000 feet of floor space, other and larger additions are planned. These may take the shape of an additional factory or even a removal to larger quarters.

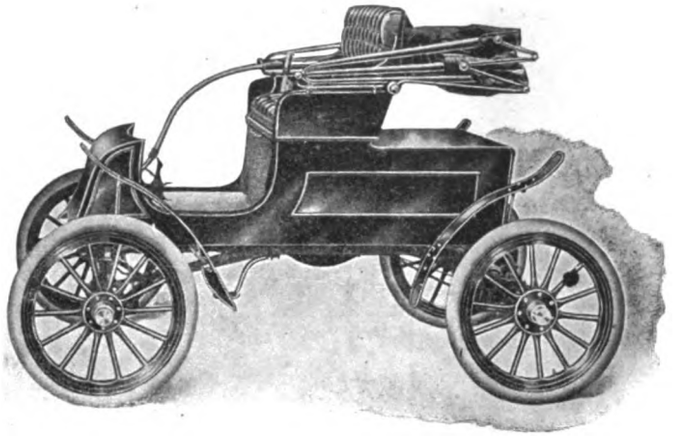
Dates Set for Philadelphia Show.

March 2 to 7, inclusive, at Horticultural Hall, are the dates and venue, respectively, decided upon for the forthcoming Philadelphia automobile show.

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"THE GREAT NORTHERN"

is what the famous NORTHERN TOURING RUNABOUT is getting to be called.



The reason is that it combines just a little more of everything that's desirable than any other Runabout on the market.

It will be exhibited in Madison Square Garden by Homan & Schulz, spaces 19-20-21-22.

Better make a note to see it.

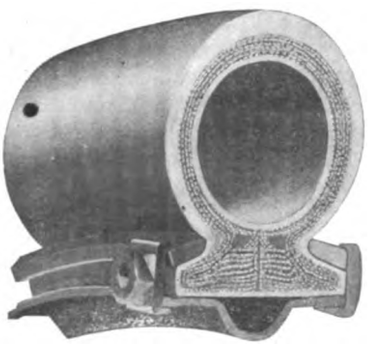
NORTHERN MANUFACTURING CO., Detroit, Mich.

AGENTS: HOMAN & SCHULZ, 100th St. and Broadway, also 38th St. and Broadway, New York, N. Y. ALVAN T. FULLER, 243 Columbus Ave., Boston, Mass.
P. DESMARAIS & CO., Bristol, Conn. BANKER BROTHERS COMPANY, Philadelphia, Pa. R. V. CONNERAT, Savannah, Ga.
OHIO MOTOR CAR CO., 317 Huron St., Cleveland, Ohio. NATIONAL AUTOMOBILE & MANUFACTURERS CO., 26 Fremont St., San Francisco, Cal.
FRANK P. ILLSLEY, 284 Wabash Avenue, Chicago, Ill.

Why Use a Tire Originally Intended for a Bicycle?

THE DOUBLE TUBE

Fisk Detachable Vehicle Tire



IS THE RESULT OF AUTOMOBILE EXPERIENCE AND MEETS EVERY DEMAND.

Fisk Rubber Company,

Write for Catalogue "H." CHICOPEE FALLS, MASS.

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THE MOTOR WORLD
DEVOTED TO THE AUTOMOBILE
And Kindred Interests

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New York, December 25, 1902.

Reliability Data and Morals.

Although so aggravatingly belated that it has lost much interest, the data found in the report of the reliability control committee of the A. C. A. still retains its value.

It is very doubtful whether anything more thorough could be compiled than the detailed story of each car told in the report. The tables lack some features that could reasonably have been looked for, and the lumping of the non-penalized stops—such as for water and on account of tire troubles—was a mistake, for it goes far toward vitiating the entire table. The error is shown most plainly in the steam division, where 84 per cent of the stops were for water and gasolene or for tire troubles—matters that should have been given under a separate head. The control repairs are not figured in the table, yet they are really the meat of the report, for they alone are new.

By a computing process we find that no less than 234 repairs were made at the night controls. As thirteen cars have a clean bill of health in this respect, those 234 repairs were made by fifty-five cars, so that the average is 4.2 per cent. The stops range from the maximum of thirteen for one to one each for four cars. A majority of these repairs were of a trivial character. In fact, many of them were really adjustments, not repairs. But the difficulty of separating them is a herculean one and it has not been made. Yet a separation is desirable, and next year it should be attempted at least.

In these repairs, as well as in the stops en route, it would have been much better had the reports been clearer and more explanatory. Frequently they are so ambiguous that they possess little value. Such explanations as "motor stalled" or "spark failed" do not explain. The cause of stalling or failing should be given as well as the fact. The deficiencies of the observers were to blame for many of these lapses, of course.

A careful perusal of the reports, with special reference to the control occurrences, shows conclusively what was pretty well known before—that no "rebuilding" of cars took place overnight.

When it is remembered that in only about half a dozen instances were cars that had arrived at the night controls on time, or near on time, late in starting, this will seem only natural. Two hours only could be spent on repairs, and frequently the dilatoriness of the observer cut this an hour, or nearly that much, short. Consequently nothing very elaborate in the repairing line could be done.

In point of numbers ignition troubles have a long lead; but without a table showing the duration of the stops it is impossible to ro more than guess at their seriousness. Most of them were of a minor character, easily located and quickly put to rights. Nevertheless, on the face of it, they were much more serious than tire troubles, although it is well known that the latter gave vastly more trouble and took more time to repair.

The mass of information contained in the report cannot be digested in one sitting. It will repay careful study.

Candidates for the Cup.

Probably there will be many points of controversy raised before the three machines to represent the Automobile Club of America in the race for the Bennett Cup finally are selected and shipped from these shores. A man who is in no way concerned with any of the candidates who have thus far declared themselves has already raised the point that only machines which are the product of responsible makers with established factories should be chosen by the club.

This point was raised because of the report that certain candidates would offer vehicles which would be the first ones they ever built.

While in one aspect this contention may seem narrow minded, there is some ground in it on which an argument could stand.

This will be the first time that America has formally asserted its pretensions as an automobile producer in competition with Great Britain and Europe. It will be done ceremoniously by challenge from the club recognized abroad as the representative body in this country. The eyes of the world will be wide open to see what are the machines that will be supposed to be the best produced here. It will be taken for granted that they come from the shops of our greatest manufacturers. Such will be the case with regard to the venicles representing England, France and Germany. Should it not be so with the American machines? Should not the competing cars from this country represent the American manufacturer? Should the car of a clever mechanic who is able to build one that may be better for the purpose of the race than any other be sent to represent the club and country when no such style of car exists as a regular product?

On the other hand it may be very aptly said that if such a car was built and sent over, and it won the cup or made a very creditable showing, it would not then be an isolated specimen. There would be a demand for others like it ,and American enterprise would see to it that such a demand was supplied forthwith. To bar such cars would be to put a damper on the spirit of inventiveness. If a man thinks he has the ideas that can bring into being a car to beat all others he should not be robbed of the incentive most apt to make him try to do it, and the winning of the cup would be such an incenetive. If a man could build his first car well enough to show by preliminary trials here its fitness to compete, why should it not have an equal chance with all others? Again, would it be just to discriminate against any one who is a member of the club should he choose to use his private means in having a car built especially for this event along the lines of his own ideas?

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The question seems to be one worth considering, but it plainly has two sides to it.

Coal Stringency Affords a Moral.

Many widely diverse elements work for the motor vehicle, and, by a sort of cumulative process, make its almost universal adoption only a question of a limited time.

During two of the four seasons convincing object lessons of its superiority over the horse are taught and driven home, not only to those directly interested, but to others to whom the matter is of little direct importance. In summer the torrid temperature unfits the placid and uncomplaining equine for the work imposed upon him. He suffers intolerably and frequently succumbs, and business vehicular traffic is hampered and disarranged, to the great discomfort of perspiring humanity. Again in winter the same experience, aggravated, is gone through with, until at times it almost seems as if the limits of human endurance had been reached.

With this good, old fashioned winter hardly more than well started, and every indication of worse and more of it being in store, we have been brought up sharply and made to face a situation without parallel. A coal famine rages throughout the land, and relief is balked almost entirely by the inadequacy of the facilities for making deliveries of the precious anthracite by teams. Horses are worked until they can scarcely stand,

Trucks enough can be found and men to take charge of them; or if there is a lack other wheeled vehicles can easily be pressed into the service. But where are the horses to draw them to come from? Diligent search fails utterly to reveal them or to hold out the slightest hope of relief.

It may be said that the obvious remedy is to get more horses. Not so. The horse at his best is inferior to the motor, and at his worst—as now—is so hopelessly distanced that it requires a strong stretch of the imagination to convince one that he is in the race at all. His multiplication would accomplish little in such emergencies as the present.

The other horn of the dilemma is a much more inviting one. The motor vehicle does all that horses can do—and more—and does it more expeditiously and regularly, and with corresponding advantages on the scores of space, economy, cleanliness and lessened wear and tear on the road surface.

That the truth of all this is being borne in on vehicle users is no secret. The presence of increasing numbers of self-propelled wagons and trucks leaves no room for denial. Such experiences as we are now going through will hasten the day when the horse will be banished from cities and regarded in another light than that of drawers of wheeled vehicles.

Silence now a Feature.

As long as users were content to put up with the noise of gasolene cars no very determined effort was made to silence them. There were both difficulties and drawbacks in the way, and with the many other problems to be solved it was felt that the matter of undue noise could well wait a little while.

But the time for action has arrived, and real efforts to reduce the noise to a minimum are being made, and with no small degree of success.

The movement, as far as big cars are concerned, began early this year, when the Mercedes Simplex—frequently sub-titled the "silent model"—made its appearance across the water. Its marvellously silent running was much commented on, and, as the event proved, the lesson was laid to heart in many quarters. Silencers that really silence, in place of mufflers that merely muffle, were for the time neglected, and mechanically operated intake valves taken up and worked over.

If by means of improved valves, etc., an approach to noiselessness can really be reached, as seems to be believed by not a few makers, a big step forward will be made.

To strive to remedy the trouble at the exhaust end is to run the risk of encountering a boomerang. No one can avoid the conclusion that the exploded charge must find ready egress if back pressure is not to result. No matter how ingenious the construction of the muffler may be it will almost certainly be regarded with suspicion. Loss of power will not be readily put up with; if there must be a choice of evils ninety-nine out of a hundred users will choose the noise—at least, until there is some pretty convincing evidence brought forth on the other side.

The general public will welcome any diminution in the volume of sound emitted by the exhaust. Users, more discriminating, will first want to know whether it is an unmixed blessing.

THE HEART
OF THE
Automobile
Industry
and Sport
WILL BE REACHED BY THE
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NUMBERS
OF
THE
MOTOR
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JANUARY 15–22.

The buyer these days educates himself by reading the automobile press.

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Cleveland, O. U.S.A. Nov. 18, 1902.

The Motor World,

Tribune Bldg.

New York.

Gentlemen:-

We enclose copy for your foreign edition, which you may also consider a compliment as it is the first ad. of this kind we have placed.

It is due you also at this time that we should say we have been well satisfied with results from The Motor World. It certainly reaches those interested in automobiles and their sale.

Yours very truly,

The Baker Motor Vehicle Co.

M. L. Goss.

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Commentary

Some kind soul, who probably thought that in this merry Yuletide whirl I had parted with my small supply of common sense along with the few spare pennies I owned, has kindly sent me a prospectus of the Novelty Exhibition, Christmas Fair and Street Carnival which is to occupy the arena so lately the scene of a six day bicycle "race." The prospectus starts off thusly:

"The object of the Novelty Exhibition is to give the public an entertaining show, appropriate to the Christmas season, where the latest inventions, novelties of all kinds, may be seen at their best. Thomas A. Edison intended placing his latest electric battery on exhibition, but was unable to complete it in time."

If there is any "novelty" in that you can use the ticket I'll never buy to see it with.

* * *

While I am on this easy money topic I'd like to say just a few words about the finest example of disposing of nothing for something I know of. To save time and to get at the subject quickly, the example is the present management of the National Association of Automobile Manufacturers. Here is an organization which, were its officers in the slightest degree representative of the automobile trade, would be a model of its kind. True, it is a model of its kind now, but this particular kind is one which no other trade would for a moment permit itself to be misrepresented and misjudged by. "Easy come, easy go!" The automobile trade has waxed so great and so powerful so quickly that the men who have made it so have had no time to worry about what its national organization was or whose its officers were. A very natural thing has happened. Those who could not in the industry itself succeed, whose failures in the automobile world have been monumental and lasting, have been allowed by the successful men to get control of the national organization with the result that the N. A. A. M. has become a sight for gods and men. Go over the list of national executive officers and on it see how many successful and thoroughly representative automobile manufacturers you will find there. When you have discovered the successes, then seek for the failures; it won't require any strain, mental or visual, to find them, they are there plentifully and prominently enough.

In one way or another there is about $10,000 per year being expended for and by this aggregation of personal and official failures. For what? For themselves chiefly. What does the automobile trade get for this $200 per week? The astonishment of every other trade organization at the kind of people who say they represent the automobile industry, is about all I can see. True, one of the leading misrepresentatives whose I-am-itness is chronic and mastodic, is enabled to find some remunerative berths for his old schoolchums and to further the pecuniary interests of a publication in which it is better than rumor that he has more than a brotherly interest in, but that does not benefit the automobile trade; to the contrary, it is positively detrimental to it. Why, then, should such a discreditable and unprofitable condition of affairs continue?

* *

Passing from the personality to locality, the executive board of officers is not by any means representative. Draw a circle fifty miles from Forty-second street, New York, and you will find that within it are located the large and successful plants of a majority of the board. The great West and New England, the two real homes of the successful automobile makers, are only accorded a minority representation. Why? Once again you will have to answer your own questions. I've been trying to discover an excuse for such an injustice for a year or more now and are no nearer finding it out to-day than I was when I first began to wonder at the supiness which has permitted such a condition of affairs to exist. It cannot continue much longer; indeed, to my mind, time has now come when the real automobile trade can no longer permit its national organization to misrepresent it in the persons of officials who, whatever else they may be, certainly are not representative successful men in the trade, therefore are not fair representatives of the trade which is one of the most successful ones of the day. Pride, self-interest, justice, good business and every other potent reason which should influence a man calls for a change and the call must not remain unanswered. The officials of the National Association of Automobile Manufacturers must be representative men of the trade and for the trade; they must be men who by their prominence in the trade will command the respect and the confidence not only of the trade, but of the commercial world; they must be men with no taint of failure or smirch of lust for private gain or personal animus upon them; they must represent all the trade all the time, not themselves always, and the trade seldom, if ever.

* *

How is this to be brought about? Easily. Let those who have made successes in their own branches of the industry take enough interest in the good repute and welfare of their entire trade to see to it that they and it are fittingly represented by a body of officers which is thoroughly national in its scope. Nominate only men who have shown by their ability to manage their own affairs that they are capable of doing the same for the association, elect them, and then loyally support them as they will deserve to be supported, and everything and every one connected with automobiling will be the gainer. Don't sit down and leave this to the other man. Doing this is what has permitted the organization to get into the hands of those who at present control it, and who fritter away its powers and possibilities for the furtherance of personal pockets, pride or prejudice.

* *

In this matter I hold no brief for any one. What I have written is the result of no personal grievance, but I have wearied of seeing the association made an annex of one man's business, and I shall free my mind at any rate by saying just what I think and by what is evident to any other man who cares to see. There is a natural dislike on the part of every one to be the first to voice a protest against such a condition of affairs as at present prevails in the management of the National Association of Automobile Manufacturers. That there exists a widespread dissatisfaction at the way things have gone I know, and for those who dissent and for myself I am entering this protest. What must come and come quickly, too, is a radical change in the affairs of the national organization and in the personel of those in control thereof. First, a broad-minded, successful man, must be chosen as president. Preferably the ideal man for the office should come from near the geographical, population and trade centre of the country, say, from around Cleveland. Then he should be a man who has a thorough knowledge of men and affairs; he must be a man who it will be a credit for the automobile trade to have act as its representative. Above all he must be a man so securely placed in regard to his worldly affairs as to make it no object for him to view with any interested eye the emoluments of his office, which he should look upon in the light of the highest honor his fellow tradesmen could confer upon him.

* * *

Where is there such a man? Surely you don't mean by this that you think there is any dearth of this kind of presidential timber in the automobile trade! There is plenty of just such men as are needed if you will only open your eyes. Take George Weiss, for example. Isn't he a man who is all and more than I have said the next president of the National Association of Automobile Manufacturers must be? Then, why not elect him to the office, and in doing so honor the organization, the office, the man and yourselves? You've got to face the issue. You can't let things go on in the way they have been going. You have got to elect a man like the one I have named, if you would be true to yourself and to the best interests of your national organization, which is in the end but another name for your business. In the inspired words of St. Tammany: "What are you going to do about it?

* * *

I don't know that Mr. Weiss will thank me for thus bringing him into the glare, but I am not looking for thanks, and Mr. Weiss, I feel sure, would prove the man for the place. If he won't have it, then he and the men of his calibre should get together and find a suitable man, and, having found him, remove the office itself from its present location to one far from schoolchum relationship and "inspiration."

THE COMMENTATOR.

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ENGLAND'S 1903 TRIALS

Rules to be Made More Stringent and Hill Climbing to be Featured.

Already the ground has been well threshed over and the outlines of the 1903 British trials have been decided upon. A meeting of the Automobile Club of Great Britain was held in London a couple of weeks ago, at which twenty-five representatives of the industry were present, and the recommendations of a special committee of the club were discussed.

Some slight alterations in these were made, and, as amended, they are as follows:

(1) That the automobile club shall hold a trial (generally on the same lines as the 650 miles reliability trial of 1902) in the year 1903.

(2) That the Crystal Palace shall be the centre, and runs should be made to seaside places at which there are numbers of visitors, such as Brighton, Eastbourne, Folkestone, etc.

(3) That the trial shall include as many hill climbing records as possible.

(4) That the trial shall take place early in September.

(5) That the total distance shall be 1,000 miles, comprised of eight runs of about 125 miles a day.

(6) That cars shall be required to be within the gates of the Crystal Palace by 12 noon on a Wednesday, the first run to take place on the Friday, and the trial to terminate on the following Saturday week.

(7) No manufacturer or seller to enter more than one car of a type in a class. No duplicates.

(8) That the public should be given to understand that the trial is a trial of trustworthiness—not appearance.

(9) No washing shall be allowed, but the car shall be driven straight into the storage building, from which the public, the owners, drivers, mechanics and every one except the club's stewards shall be rigorously excluded. In the morning, when the observer has taken charge of a car, the driver and mechanic may be admitted to the storage building and the word will be given to start. Adjustments and repairs may then be made, but one mark will be deducted in respect of every minute during which the car is stopped or during which the driver or mechanic leave their seats for the purpose of adjustment, washing, repairs or replenishment.

(10) As the exclusion of the public from the storage building might interfere with opportunities of doing business, arrangements should, if possible, be made by which one exact duplicate of each car entered and running may be shown in the upper part of the palace.



C. AIRCOOLED BENJAMIN TESTING A FRANKLIN CAR DURING THE RECENT SEMI-BLIZZARD.

President A. R. Shattuck, of the Automobile Club, says that the Committee of Fifty in New York City, which steadily opposed the passing of an ordinance permitting a speed of ten miles an hour in the city, has now agreed to recommend to the Board of Aldermen that a speed of fifteen miles an hour be allowed outside of the Borough of Manhattan.

Beginning with the New Year the capacity of the Winton plant will be increased to four cars per day. More than 250 of the new touring cars have been sold already, representing a turnover of more than $600,000.

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The Subject of Ignition.

One of the most interesting problems in connection with motor-cars has always been the question of the most suitable ignition. Incandescent platinum tubes held their sway for years, and some of the best manufacturers of automobiles would not hear of any other system, and ridiculed electricity as a means of igniting the explosive mixture in the cylinders. Notwithstanding all opposition, however, electric ignition made its way steadily and finished by entirely supplanting tubes, which are now a thing of the past.

They have been banished for two reasons, first, on account of bother with the burners and the attendant risk of fire, and, second, on account of the fact that tube ignition cannot be retarded or advanced. The only defect of the electrical ignition is, perhaps, the attention required to the batteries and the recharging or renewing of the same. In order to overcome this trouble dynamos and magnetos have begun to replace batteries. With the first there is the danger of burning out the armature, if too high a speed be reached, and the difficulty of getting a spark at a slow speed for starting purposes. The magneto, on the other hand, gives a current at a low speed, and for all practical purposes cannot be burnt out. Hitherto with the magneto the spark has been produced by means of a sudden rupture of the circuit in the cylinder. This necessitates a mechanism more or less complicated, worked by the cam shaft, and requiring several small springs; the method of retarding or advancing the ignition has to be applied to this mechanism, which needs also provision to prevent an accident, should the motor backfire. All of this constitutes a certain difficulty, and adds to the cost and care of a motor. It is, however, perhaps the most satisfactory form of ignition, and as such is adopted in most high-class cars on the Continent.

At the Standard Depot.

J. W. Chisholm, of the Standard Automobile Company, 136 West Thirty-eighth street, New York, is preparing for an active spring campaign with the Decauville and American cars, for both of which lines he has the agency. The American cars will be exhibited at the Eastern show by the makers, but Mr. Chisholm will have a special display of two Decauvilles, one of eight, the other of ten horse-power, in a separate space.

Receiver Still Mum.

Receiver Brownell of the Taunton (Mass.) Automobile Co. says that no figures of assets and liabilities can yet be given out regarding the affairs of that company. Nor will he say whether or not its continuance is likely.

Open for an Agency.

The Metropolitan Motor Car Co., which conducts an up to date automobile station at No. 164 East Fifty-seventh street, New York City, is open to taking on the agency for one or two good makes of cars.

Two new Types of Closed Cars.

Two entirely new vehicles which will almost certainly attract a great deal of favorable attention and meet with large sales are just being marketed by the Electric Vehicle Co. of Hartford, Conn. These are coupes of similar design and construction, with the exception that one is operated from a driver's seat at the rear, while the other is driven from the inside, dispensing with the necessity of a separate operator. Both of these vehicles are built exclusively for private service.

The passenger compartment of the rear



driven model is furnished to meet every requirement of elegance and luxurious taste, and regularly accommodates two occupants. If additional seating capacity is required a hinged seat forward, facing the main seat, may be lowered and brought into service. The location of the operator at the rear leaves the forward view from the compartment entirely unobstructed, a feature which makes the vehicle an especially desirable one for sightseeing or pleasure driving at times when the use of an open carriage might be undesirable. In pleasant weather the windows in front and in the doors may be dropped, making the vehicle practically



an open one. The upholstering is in claret colored broadcloth, and the interior furnishings include silk curtains, electric light in dome fixture controlled from the inside, card case with memorandum pad, a mirror and a speaking tube connecting with the operator. Every recent improvement is embodied in the electrical and mechanical equipment. The weight of the divided battery is distributed over both axles, and the battery compartments have removable coverings, so that the cells are accessible for inspection without removing the trays. The double motor equipment affords three speeds forward and three backward, with a maximum speed of fourteen miles an hour. There are foot operated regular and emergency brakes of the latest pattern, side lamps of the most modern style, and other standard features include a combination voltammeter, foot operated emergency switch and an electric alarm gong operated by foot push. The wheels are equipped with three-inch solid rubber tires.

The inside operated coupe is similar except that the controlling, steering and brake levers are within the compartment, and there are large side windows at the rear, making the sides practically all glass. This vehicle has been produced in response to a widespread demand for a new, thoroughly up to date, closed in electric automobile operated from the inside. It is peculiarly suited to physicians and others requiring a vehicle which may be used comfortably at all times without regard to weather conditions.

Showing the Olds's "Insides."

One of the exhibits at the forthcoming New York show that is certain to be interesting and instructive is now to be seen at the New York branch of the Oldsmobile Company, 138 West Thirty-eighth street. It is a regular stock Olds engine mounted on a low stand, with sections cut away so that every detail of every working part can be watched and studied. A battery is coupled on, and when the crank is turned by hand the movement of the piston inside the cylinder can be seen and the spark in the explosion chamber; it is easy to see how the valves work and just at what part of the stroke an early or a late spark occurs. This is the sort of an exhibit of which there can hardly be too many. The veriest numbskull could be made to understand by such methods just what it is all about and the why of it.

The Good Roads Committee.

A committee to look after matters pertaining to the National Good Roads Convention to be held in Chicago during the week of the automobile show was last week appointed by the executive committee of the National Association of Automobile Manufacturers. Messrs. John Brisben Walker, M. J. Budlong and J. Wesley Allison comprise the committee.

Kemble Coming Back.

Manager Kemble, of the Central Automobile Company, of 1,684 Broadway, N. Y., is due here next week on the Philadelphia. Mr. Kemble has been over to the Paris show seeking for things that are new and excellent in French manufacture. What he has done in the way of contracts will not be known until he arrives.

Remington Future in Doubt.

The future of the Remington Automobile & Motor Co., Utica, N. Y., was discussed at a largely attended meeting of the stockholders held last week. No action was taken, although it was the general opinion that a reorganization and continuance of the business was feasible.

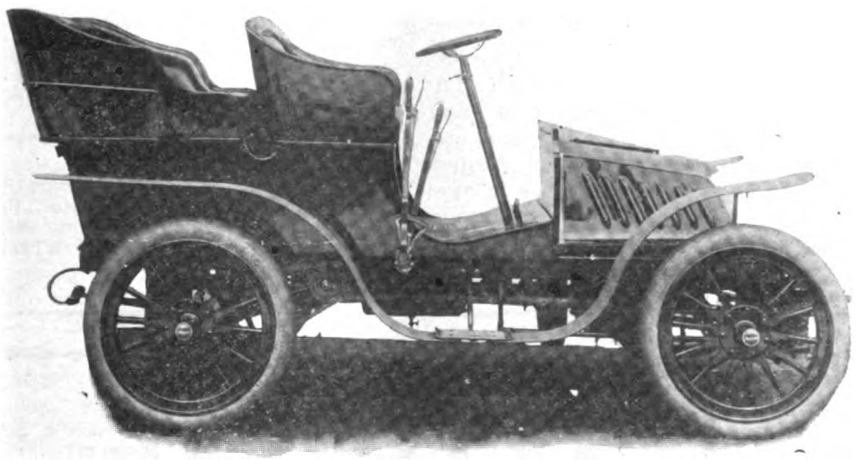
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REBER IS READY

Reading Manufacturer now has Cars on Market —Some of Their Features.

Designed upon the most approved modern lines, the gasolene car shown herewith, the product of the Reber Mfg. Co., Reading, Pa., bears every appearance of possessing quality of the kind that has made the Pennsylvania city's manufactures famous. The Reber company has been at work on it for some time, and now puts it forth with the full confidence that it merits the approval of autoists.

The concern has ample facilities for turning out a first class car. It occupies the plant of the Acme Mfg. Co., one of the factories of the American Bicycle Co., being, in fact, the legitimate successor of the former, James C. Reber being the ruling spirit in the present company, as he was in the former one. The car was designed by James G. Heaslet, whose experience in the gasolene manufacturing field has been long and extensive.



The car, which is fitted with a removable tonneau, weighs 1,650 pounds, has a wheel base of 6 feet 6 inches and a gauge of 4 feet 6 inches. It is propelled by a double cylinder vertical gasolene engine, placed in front under a bonnet, which develops 12 horsepower at 1,000 revolutions a minute. The transmission is of the slide gear type, having three speeds forward and a reverse, the gears being readily removed without disturbance. The speed is controlled by a throttle governor and positive lubrication is provided.

The cylinders are water cooled, the circulation being effected by a centrifugal pump. Although inclosed and running in an oil bath, the parts are readily accessible. Thirty-inch ball bearing wood wheels are used, the rear ones of which are driven direct by double chains.

A foot brake on the differential and hand emergency brakes on each rear wheel are provided, the brakes being double acting. The engine is released from the running gear by the application of either brake.

The frame is trussed, and the springs are semi-elliptical. A positive wheel steering is employed.

The Reber company will be ready to make deliveries by January 1.

Percy Owen's Good Work.

Parisian methods in handling advance sales have developed in New York. The 1903 20-horse power Winton touring car is selling at a premium. At least one has been thus sold. The 1903 models are not quite ready for delivery, but the forehanded Percy Owen has taken orders for forty-one of them. One of the purchasers was a prominent furrier of the city, who had a call on one of the first dozen machines. A few days ago the furrier sold his order claim at a premium to a man more impatient than himself.

The Harkness Way.

Although they are not yet being voted for at church fairs, there are several ways of obtaining an automobile beside making it. One real nice way is that in which H. S. Harkness recently acquired a 20-horse power Mercedes Simplex. Mr. Harkness, sr., preparing to go to California for the winter, decided to take a string of horses and not his automobile, which, by the way, is finished in a rich olive green and is about as handsome a machine as there is in New York City.

"I don't know what to do with the Mercedes," remarked Mr. Harkness, sr.

"Why don't you give it to me?" asked the son.

"But you have one."

"That makes no difference; I'd like to have it."

"Well, if you want it take it."

Now the handsome big machine is on the market.

Grout Tonneau Coming.

It is understood that a Grout tonneau car will be a feature of the Orange, Mass., concern's exhibit at Madison Square Garden. The car will weigh about 2,500 pounds, has large steam generating capacity, with a 12 horsepower engine. It will also be equipped with a condenser.

WHY HE INSURES

And in View of Present Conditions This Particular Insurance is Wise Precaution.

Referring to the comment in these columns last week on the advertisement in a daily paper of a 10 horsepower Peugeot car, in which the fact was mentioned that an accident insurance policy was included with it, a correspondent writes:

"I have a car of this make, which is my seventh automobile, I having driven a car for over five years. I have always insured all my cars against fire just as I insure my household furniture, house and other valuable possessions. The accident policy mentioned is not to protect the owner from loss or damage caused by smashups to his own car, but to protect him under damage suits which might be brought against him by owners driving fractious horses that might take fright at the automobile.

"The manufacturing concerns in which I am interested insure themselves in the same manner against lawsuits which might be brought against us by our employes who are sometimes injured in the performance of their duty, such injuries, however, being due to carelessness, yet at the same time shyster lawyers are always found in abundance to undertake such suits for damages. A large number of my friends carry accident policies to protect themselves in the manner I have stated. It does not mitigate in any degree against the automobile because such policies are carried by the owners. Any party purchasing the car advertised would naturally insure it against fire, and would have to pay the insurance just as the present owner has had to pay it. The accident insurance is, of course, optional with the owner, though I believe it to be a safe and conservative course to pursue so long as judges are found who will take the word of anybody else against that of an automobilist.

"You take the stand that by advertising the insurance policy the owner has overcome to a certain extent the dangers of automobiling. You might as well draw the conclusion that it is dangerous to live because so many people carry accident policies against injuries in riding on trolley cars, trains, steamboats, etc., and I do not therefore think your ground well taken in regard to it nor your criticism quite just."

Foul Weather Protection.

That the automobile is an all season, all weather vehicle is evidently an article of faith with the Automobile Equipment Co., Indianapolis, Ind. Rain aprons of all shapes and sizes, chain boots, engine cases, antifreezing compounds, winter oils, etc., are timely articles described in a little pahphlet got out by them. It bears the catch phrase, "'Tis an idle sheet does no one good."

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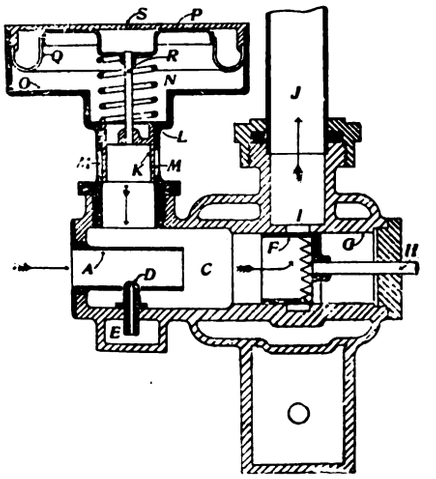
New Panhard Carburetter.

In throttling a motor with inlet valves actuated by suction, it is a matter of great difficulty, if not an impossibility, to regulate by hand the admission of air to the mixing chamber in a way to secure an absolutely uniform mixture when the motor is rrunning at far below its normal speed.

To avoid this inconvenience, Major Krebs, director of the Société Panhard et Levassor, has designed a new system of carburetter, in which the admission of air is regulated automatically by the engine, so that, as the mixture is always the same, and only varies in quantity, the motor will run at a low speed without danger of stopping through the admission of poor gas. This carburetter is regarded as of so much importance for the economical and efficient working of a motor that it was recently described before the Paris Academy of Sciences.

As will be seen from the accompanying drawing, it is designed in three parts. The first consists of an air inlet A communicating with the mixing chamber C. The spray nipple D descends into the receptacle E, which communicates with the float chamber. The second part forms a regulator consisting of a piston F moving in the cylinder G. The piston rod H is actuated by the centrifugal governor of the engine. The cylinder G, moreover, is in communication with the motor cylinders by the port I and the pipe J.

The third part is the extra air inlet, consisting of another piston K in the cylinder L, which communicates with the chamber C. The piston K opens and shuts the ports M M in the cylinder L, and the rod R is joined at its upper extremity to a piston P of smaller diameter than the large cylinder O



in which it moves. The periphery of the piston P is connected with the sides of the cylinder by a loose elastic diaphragh Q. A small aperture S admits air above the piston and diaphragm. The piston is kept in position by a spring N. Its operation is as follows: The piston F varies in travel according to the speed of the motor, the suction of which draws spirit through the pulverizer D and air through the orifice A, and at the same time tends to draw down the piston K, and uncover more or less the air ports M M, which are closed when the piston P is kept up by the spring.

When, therefore, the motor is running at nigh speed the piston F has a long travel and takes in a large quantity of spirit, but at the same time, as only a small fixed quantity of air is admitted through A, the piston K is sucked down to uncover the ports M M, which admit the necessary quantity of air for the mixture. As the motor slows down, the piston F, actuated by the governor, has a shorter travel, and the ports M M are only partially opened during suctional strokes; and when the piston F is at its shortest travel, the suction is insufficient to overcome the resistance of the spring N, with the result that the ports M M remain closed, and air is only admitted through A in quantity proportionate to the smaller admission of spirit through D. The air is thus kept strictly proportionate to the spirit, and the mixture is uniform at whatever speed the motor may be running.

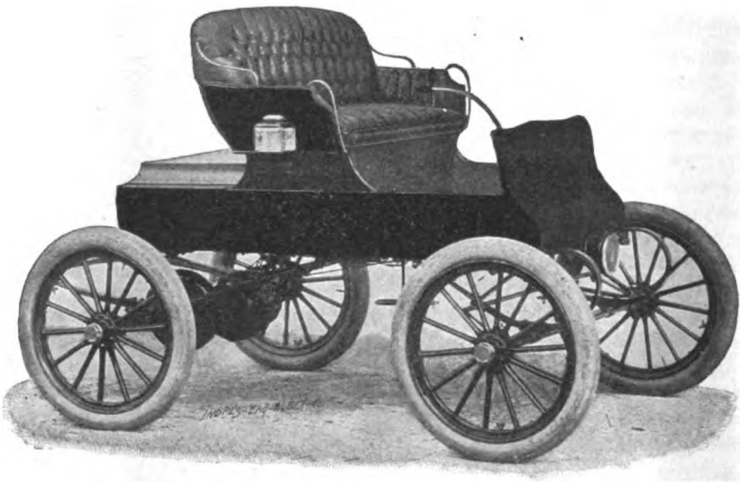
Recent Incorporations.

Yonkers, N. Y.--The Turbine Electric Truck Company, with $100,000 capital, to make electric motors, etc. Directors, J. D. Sullivan, H. D. Crippen, J. J. Crippen, William C. Dodge, New oYrk; F. A. Curtiss, Nutley, N. J.

Jersey City, N. J.—Thermobile Co. of America, with $1,000,000 capital; to build and deal in automobiles, motors, etc. Corporators—William H. Lake, Z. Wirt and D. M. Bell, all of Chicago.

A NEW NATIONAL.

Has a record of over 100 miles over level city streets on one charge.



10 other Models, all leaders in their class.

RUNABOUTS.
STANHOPES.
PARKTRAPS.

MODEL 50, SPECIAL.

The most powerful Electric Runabout on the Market. The best line for the Agent. Catalogue upon application. Agents wanted in unoccupied territory.

NATIONAL MOTOR VEHICLE CO.,

(Formerly National Vehicle Co.,)

See us at Space 124 Madison Square Garden, January 17-24.

1400 East 22d St., Indianapolis, Ind.

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SYRACUSE CLUB ACTIVE

Selects an "Official Attorney" and Starts Plans for Road Reform and a Race Meet.

That the Syracuse (N. Y.) Automobile Club is very much alive and aggressive these days was convincingly demonstrated last week. Arrangements for the annual meeting and banquet, to take place at the Yates House on January 5, were made, and the devising of a plan for the betterment of roads and for obtaining the permission of the State Fair Commission to run a race meet next September in conjunction with the fair set about.

A good roads committee, with George S. Larrabee as chairman, had been appointed at a former meeting, and an official attorney, Henry Waters, was selected. An organized effort for the improvement of the neighboring roads will be begun at once.

The plan is to compel the toll companies to live up to the charters by which they control the roads—to force them, if they will not do it of their own free will, to expend the greater part of the earnings of the roads upon improvements, or at least enough to make them reasonably good. If this plan does not succeed the club will be a factor in a fight for State roads running parallel to the present toll roads.

The toll roads will be asked to fall in line with the farmers, the automobilists and the Good Roads Commission in the interests of better highways, as covered by the Rigbie-Armstrong bill, Chapter 115 of the Laws of 1898, by which a portion of the expenses for the improvement of the roads is paid by the State.

Chairman C. A. Benjamin, who, with Secretary Frederick H. Elliott, compose the committee which is seeking the sanction of the State Fair Commission for an automobile day at the fair, made the statement that the club's request will be presented to the commission at a meeting to be held in Albany this week..

Given Justice in Jersey.

It is a genuine satisfaction to set one common sense decision in an automobile case against the multitude of outrageous ones that have been rendered in the last year. At Hackensack, N. J., last week Richard M. Willis, a wealthy resident of Englewood, was defendant in a suit for damages brought by Herbert Quinting and tried before Judge Dixon.

Quinting testified that Willis's auto scared his horse and his wagon was upset, causing injury to his wife and himself. Evidence for the defence showed Quinting was more frightened than his horse, which he drove into a ditch, causing the wagon to upset. Mr. Willis stopped his machine, helped Quinting and his wife from the wreck, ordered a carriage to take them home and paid for all damage done the harness and carriage. The jury non-suited Quinting.

Stewart Rushes Eagle Rock.

After standing for more than a year at 2 minutes and 43 seconds, a new record that will probably hold for a long time was made on Eagle Rock Hill last Tuesday when W. J. Stewart, of the Automobile Club of New Jersey, negotiated the mile long ascent in 1 minute and 53 seconds, a cut of just 50 seconds.

"The record is official in every way," said Stewart to the Motor World man just after the ride. "I obtained sanction from the A. C. A., and had a corps of officials, timers, etc., present. The road was in good shape, and, barring a nasty head wind on one part of the hill, the conditions were nearly ideal. I think the mark set will stand. It is so much better than anything I have been able to do—although I have made several cuts of five and ten seconds—that I think it has been put where it will stay."

It will be recalled that on Thanksgiving Day, when the New Jersey club held a hill climbing contest on Eagle Rock, Stewart's time of 2:53 was the best of the day, although a Stevens-Duryea car was at first credited with having covered the distance in 2:45. Afterward it was announced that an error had been made and that the correct time was 3:45. On both occasions Stewart, who is the chairman of the A. A. A. racing committee, used a steam car.

Butler Watched at a Dinner.

Last Monday night a "reunion dinner," arranged by a few of the participants in the reliability run of Ostober 9-15, was partaken of at the New York Athletic Club, and a most enjoyable evening was spent by nearly three score of the contestants and observers. The dinner was made the occasion of a presentation to Secretary S. M. Butler of a very handsome gold stop watch, tendered as a mark of the appreciation of his services in connection with the run. Winthop E. Scarritt acted as toastmaster, and the following themes were responded to in a happy vein: "The Automobile Club of America," President A. R. Shattuck; "The Reliability Contest," John A. Hill; "The Contestants," Percy Owen; "The Observers," C. H. Gillette; "The Press," Angus Sinclair; "Free Lances," W. J. Stewart, E. E. Britton and J. Dunbar Wright.

Will Have Upright Engines.

The gossipy little bird that carries news has a twitter to the effect that the Winton machines which will be built to compete for the Bennett Cup will have four-cylinder engines and that the engines will be upright

Motor League's Annual Meeting.

The annual meeting of the American Motor League will be held in this city on Thursday, January 22, during the Madison Square Garden Show. The election of officers will take place and routine business transacted.

CONVERTED TO FURS

Derided Them at First but one Ride in Open Country Dissipated all Doubt.

Furs look just as good as they feel these wintry days, and the more the autoist is able to pile on himself the better he is pleased.

"I really believe they take delight in zero weather," exclaimed a man who had been invited to ride with a friend in a big touring car, "and would be thankful if they had a blizzard every week or so. Then they would be able to put on a few more thicknesses of furs.

"When I came to take my ride I was, as I thought, pretty well prepared for it. A big, warm overcoat of Irish frieze, heavy gloves and a cap that could be pulled down over my ears—that seemed to me all that was necessary, even though the thermometer was hovering around ten degrees above zero. But no. Nothing would do but I must put on half a hundredweight or so of wraps right off the reel. The pitying look my friend gave me was enough to make me submit tamely.

"And, to be perfectly candid, it did seem all right after I got into the togs. I had only to sit down in a roomy, comfortable seat, so that the weight and bulk of the covering did not inconvenience me.

"When we got out in the open country it soon became plain that I was weatherproof. There was a pretty stiff wind blowing, but I was so bundled up that I did not feel it and the cold never reached me at all.

"So I guess these furs, etc., are all right, although they do look theatrical and seem as if they were intended mainly to make their wearers look 'sporty.'"

Adams Again Heads Long Islands.

On Wednesday evening, December 17, the Lond Island Automobile Club held its annual meeting and dinner at the Lincoln Club, Brooklyn. The following officers to serve for the ensuing year were elected: President, L. R. Adams; vice-president, Lawrence Abraham; secretary, Read Halliday; treasurer, Edwin Melvin; governors, Adolph Mollenhauer, Read Halliday, Nathaniel Robinson; L. A. Hopkins; F. G. Webb and Lawrence Abraham.

In President Adams's case the club returns to its old love, he having been its first president, serving until President Grant was elected last year.

About twenty-five members sat down to the dinner. A. R. Pardington acted as toastmaster. L. R. Adams spoke on "The Future of the L. I. A. C.," F. G. Webb talked on "The Club and Its Past," W. W. Grant, the retiring president, spoke on "The Present." Conspicuous in the dining hall were three of the prizes awarded by the club at its races on the Brighton Beach track last August.

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Nickel Steel for Motor Cars.

Nickel steel, in automobile work, for rivets, pins, exhaust valves, rods, shafts, axles and springs is recommended by a transatlantic writer. Its chief merits are (a) Stiffness or resistance to deflection under impact, and toughness or resistance to fracture under repeated impact. Steel with 3 per cent nickel shows 48 per cent greater stiffness, and 45 per cent greater toughness, than similar carbon steel. With 5 per cent nickel the difference is even greater. (b) Elastic limit.—The elastic limit of mild and medium hard steel is usually taken as 46 to 50 per cent of the ultimate strength. With 3 per cent nickel steel it is stated to be 63 to 74 per cent. (c) Tenacity.—In simple carbon steel, a crack once formed quickly develops, and the material breaks short. In nickel steel the rend is gradual. The latter gives warning, the former does not.. (d) Temper.—Nickel allows a reduction of carbon, makes the steel more sensitive to temper and facilitates the tempering of irregular shapes. Where a forging is too complicated for oil tempering the requirement may be met by using a somewhat softer and tougher steel and introducing from 3 to 4 per cent nickel. (e) Resistance to oxidation and heat.—An 18 per cent nickel alloy is said to be practically incorrodible. A high nickel alloy also withstands well the action of heat. (f) Antifrictional properties.—The nickel renders the wearing parts of machines which run on other parts less liable to cut, the nickel apparently having the property of making the surfaces smooth with wear, even though not always properly oiled.

India a Land of Promise.

There is said to be a magnificent future for the motor car in India. The climate kills the individual horse and demoralizes the breed. Added to this, a high speed car on the splendid wide and unfrequented Indian roads would furnish an ideally cool recreation. Everybody in India has "money to burn," railway travelling is horribly hot. India is a country of magnificent distances, and nobody shrinks from long journeys. In fact, the country, its customs and its roads fit the car better than any other corner of the globe.

DeDion's Big Business.

Some idea of the magnitude of the De Dion-Bouton business may be obtained from the statement that the 1902 output of De Dion-Bouton cars and frames approximated 2,000, and that of engines 5,000. The total number of cars or frames made to date is 6,000. The total number of motors made to date is 33,000; this, of course, includes motors of all kinds, from the old 1¼ h. p. air-cooled tricycle engines of some years back. The number of workpeople employed is 2,150, independent of office staff, which is about fifty.

Court Sanctioned Law's Violation.

In granting special dispensations for exceeding the speed limit England has set the fashion. In connection with a recent murder trial at Ipswich the judge and jury expressed a wish to see certain letters written by the prisoner during the period of his incarceration. In order to obtain these it was necessary to send to Peasenhall—a distance of twenty-seven miles. Counsel for the defence promptly requisitioned a motor car, which started with the messenger at 11:30 a. m. The journey to Peasenhall and back to Ipswich was made under three hours, the return being accomplished in just over the hour. This speed was made possible by a special permit for urgency and a tacit understanding that no penalties should attach to violations of the law as to the speed of motor cars.

In this progressive country physicians going on a "hurry call" in the city must not go faster than eight miles an hour—if they use an automobile. If they drive a horse hard enough to cripple him it is another matter.

Salt as an Anti-Freeze.

An effective and very cheap anti-freezing solution is said to be made by putting three-quarters of a pound or thereabouts of ordinary salt well dissolved in each gallon of water carried by the car. Salt only costs about a cent per pound, so the expense is



10 H. P. GASOLENE MOTOR.

"It is better to be sure than to be sorry,"
as many men have discovered who overlooked the claims of the
THE AUTOCAR.

Why be sorry when you can be sure? It costs you nothing to learn our story and to examine our car and it may profit you much. Why not do it?

THE AUTOCAR CO., Ardmore, Pa.

NEW YORK, N. Y., A. G. Spalding & Bros., 33 W. 42nd St.
BOSTON, MASS., H. B. Shattuck & Son, 230 Columbus Ave.
PITTSBURG, PA., Banker Bros. Co., Baum and Beatty Sts.
DENVER, COLO., Felker Cycle Co., 1535 Tremont St.
PHILADELPHIA, PA., Banker Bros. & Co., Broad and Vine Sts.
WASHINGTON, D. C., National Cap. Auto. Co., 1124 Connecticut Ave.
CHICAGO, ILL., F. P. Illsley, 284 Wabash Ave.
LOS ANGELES, CAL., Heineman & Pratt, 705 Main St.

STEARNS CARS.

Everybody is Talking About Them!

WRITE FOR DETAILED INFORMATION, AND INSPECT THEM AT NEW YORK AND CHICAGO SHOWS.

THE F. B. STEARNS CO.,
CLEVELAND, O., U. S. A.

HOLLAND MOTORS.

None so Good. None so Cheap.

FOUR SIZES

1-1-4 H. P., Air Cooled for Bicycles, also all Accessories for Motor Cycles.

2-3-4 H. P., Air or Water Cooled. 6 H. P. Water Cooled.
10 H. P., Double Cylinder, Water Cooled.

Send for Catalogue and Price List.

THE HOLLAND AUTO CO.,
62 Van Winkle Avenue, JERSEY CITY, N. J.

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FOR RURAL DELIVERY USE

Unofficial Test Shows the Value of Motor Cars for That Public Service.

It is just beginning to be realized what a splendid field the rural mail delivery service affords for automobiles. No horse can compare with the motor vehicle in either speed or endurance, and the balance inclines the same way as regards economy.

Out in Montevideo, Minn., one day recently, an Oldsmobile was put on the route of a horse drawn vehicle, and the trip is thus graphically described by F. E. Sharlow, the owner of the car:

"Not long ago the rural mail carrier of Route No. 3 asked me to take him on his regular twenty-six mile trip with my Oldsmobile. He wanted to give his horses a rest and also see whether much time was to be gained by delivering the mails with a horseless carriage.

"The morning was cool, with threatening clouds overhead, and I was not pleased at the outlook, for rain seemed almost certain. While I had confidence in the ability of the machine to go through almost anything, I was not prepared for all kinds of weather on this occasion, and hesitated somewhat before deciding to help him out of his difficulties. It was a generous thought; for I felt that I might get into difficulties of my own. However, I would have company in pulling him into it with me. At 8 a. m. I was on hand, after replenishing the gasolene, water supply, oiling up, etc.

"On arriving at the postoffice I found the carrier equally as prompt, so we lost no time in getting off at 8:03. Uncle Sam, as you know, takes the right of way over everything, so we didn't stop to observe speed limits, and soon had the machine doing twenty miles an hour through the main street of the village. Over railroad tracks, through timbered sections, across bridges, along roads good and bad, uphill and down, the faithful little Oldsmobile carried its burden of 400 pounds in steady and speedy fashion.

"My companion had arranged his bundle in five smaller packages to make sorting easier en route, and yet he was kept busy with both hands and teeth in order to have each farmer's mail ready for the box when we would reach it.

"First I would turn up toward the box on the right, pull it open, in would go the mail, shut it again and off to the next, perhaps giving my friend an opportunity this time to exercise his skill in doing the act quickly.

"Well, we kept this up, box after box, yes, seventy-five of them, starting and stopping, and just once in our hurry did we put mail in the wrong box, which necessitated our turning back to replace it with the proper bundle.

"Why he selected the busiest morning of the week for this trial I do not know. The horses would have enjoyed so many short rests—I didn't, for I was anxious to make as good time as possible.

"Such a morning surely gave us a test of what the machine would do any other day of the week, and, too, the roads were not the best. At one place, a new turnpike extending one-half mile, was in construction. Here we were compelled to go out in the grass, through the slough over which the new road was building. Talk about rough places, well, we won't try to describe them here. Again, three miles of sandy road, three to six inches deep, made speeding impossible. The best roads we found were tracks made by one wheel following another without a sod turned or work of any kind. Where they had ploughed up and scraped into the centre, at some time or other, the going was quite rough and rutty. Such roads are a waste of time and money. What they should do is haul on the road, without ploughing it, until they are able to construct properly.

"We were bothered by teams but very little, however; it is aggravating to get behind a string of heavily loaded wagons when the width of the road will not permit you to pass, and still more aggravating when the road is smooth and level.

"As we pulled into town we looked at our watches again to note the time we had made. The hands pointed to 10:29 a. m. This was two hours and thirty minutes better time than the carrier had ever covered the territory with team.

"I think the test a creditable one, and was made without a missing, explosion or hitch of any description. At one halfway house we added a little cooling water and oiled a few bearings, not from necessity, but to be on the safe side. The Oldsmobile was in service the balance of the day and evening, and is always ready just for such trips."

Cuba as a Market.

Although automobilism is in a very backward state in Cuba, there is an opportunity to do considerable business there. Such is the conclusion of George M. Dickson, who has just returned from a trip to the island, undertaken in the interests of the National Vehicle Co., Indianapolis, Ind., where he secured satisfactory representation for his concern. He says there are very few automobiles in use. Local conditions, customs duties and lack of charging facilities prevent their extensive use, although the future trade at Havana and other points should be considerable. The entire city possesses but twelve or thirteen automobiles, several of them being old patterns and out of commission; there are but two or three up to date machines in the city.

Darracq's Big Profits.

Just under half a million dollars is said to have been cleared by the Darracq Co. on the year's business.

7000 MILES ON ONE SET

And Affidavits are Ready to Back it up—The Batteries as a Scapegoat.

If there is any scapegoat about the motor vehicle, it is probably the battery. Although usually unjustified whenever a man cannot locate a cause of trouble, he promptly suspects if he does not outwardly blame the battery. This weakness applies not only to the car owner, but to many supposed expert repairers; in fact, one of them recently laughingly admitted that it was common practice when "stumped" to throw the blame on the batteries, "and," he added, "it really is queer how often a new set will make things rights."

When this remark was repeated to William Roche, the well-known maker of Autogas batteries, he stated that he was not at all surprised.

"They have to appear wise," he said, "and I suppose it is as easy to blame the batteries as to blame anything else. But the right batteries are as dependable as any other part of the machine. The trouble with too many people is that while they will pay or ask several hundreds or several thousands of dollars for a car, they will try to save a few cents when it comes to the purchase of the batteries. You may take my word for it that any man who is willing to pay the price can get a good battery. Why, I several months ago sold a set to Mr. Harlan W. Whipple and up to the time of the New York-Boston reliability run he had got 3,800 miles out of them. When he entered the run he bought a new set. After it was over he replaced the old one, and so far as I know, he is still using it. I sold another set to a Wall street man, Mr. Deisinger, and he used them for 7,000 miles. Yes, sir; seven thousand miles, and Mr. Deisinger told me that if at any time I wanted affidavit to the fact he would execute one. I repeat that any one who pays the price can obtain a good battery without any trouble at all."

Here's an Oily Guess.

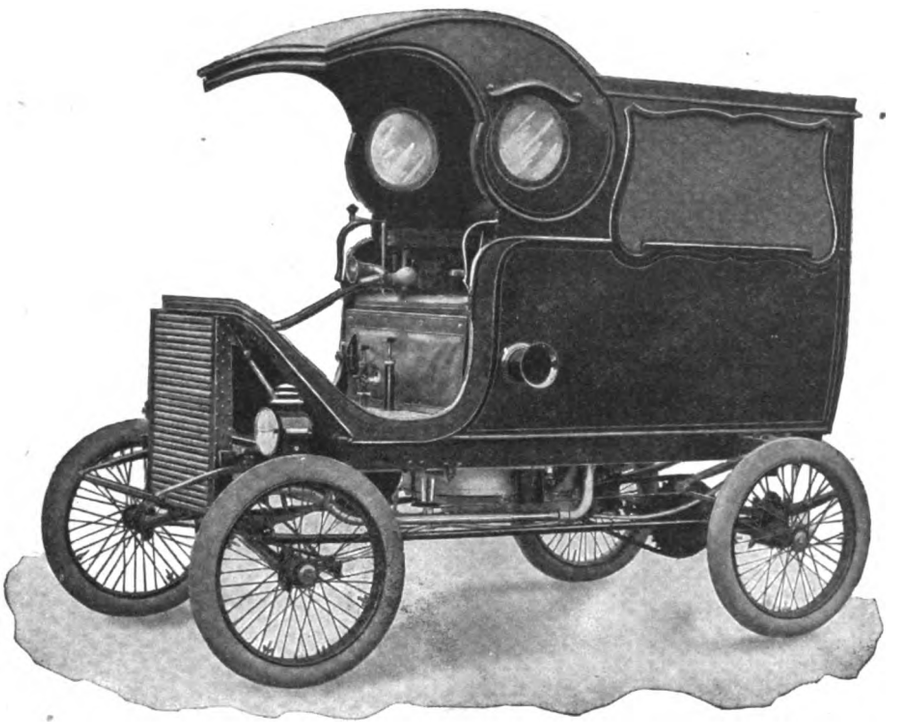
"What is the annual consumption of oil?" asks the Car, and goes on to say: "It reaches the respectable total of 630,000,000 tons, of which 170,000,000 are consumed in the United States, 148,000,000 by Great Britain, 74,000,000 by Germany and 38,000,000 by France. As 500 grammes of oil (1 1-10 pound avoirdupois) produces an energy of one mechanical horsepower, and as this equals in continuous effect the efforts of twenty-one men, it follows that the consumption of oil by the entire world permits of a power development of 1,238,000,000 horsepower, which equals the work of 26,000,000,000,000 men.

Royal Phelps Carroll will leave New York this week accompanied by his twelve-horsepower Panhard for a tour of several months in Italy, France and Spain.

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The White Delivery Wagon.

Just prior to the reliability contest last October the White steam delivery wagon made its first appearance. Almost immediately two of these vehicles were started in the famous run to Boston and return, and the splendid showing they made is a matter of history. If any doubt as to the practicability of a vehicle of this sort had been entertained to that time it was effectually dispelled by this contest.



Launched thus quietly, the vehicle has in a short space of time demonstrated that it is the equal of the regulation White car in reliability and efficiency. More than this cannot be said.

This delivery wagon is intended particularly for the light retail trade, such as drygoods, laundry, mail service and small parcels of all kinds, the total of the load, aside from the driver, not to exceed 500 pounds.

The total weight of the wagon is 1,700 pounds. The carrying space in the body is 42 inches long by 44 inches in height by 32 inches in width, and its height is divided in the centre by a rack, which can be removed if desired. The wheels are 30 inches in diameter, and are fitted with 3½ inch clinches tires. The wheel base is 6 feet 9 inches, the tread is 54½ inches, and the total clearance from the dust caps on the wheels is 60 inches. The car is 9 feet 6 inches in length over all.

The engine and steam generator in the car are the same as in the regular White Stanhope, the arrangement being different, the engine being back of the generator, and is the latest style of encased engine. All these cars are equipped with condenser in order to avoid any appearance of steam in the crowded traffic, where they are certain to be used.

Glycerine to Prevent Freezing.

One part of glycerine to five parts of water is a mixture that has a freezing point of about 24 degrees Fahrenheit, and it would seem a suitable one, provided no deleterious action was established in the circulatory system by its use. In trial it has been found to attack rubber tubes used to connect various pipes of the system, causing their failure, but not to affect metal tubes.

While pure glycerine is decomposable by heat, this mixture will be found stable at any temperature short of the boiling point, yet it must not be supposed that when a glycerine solution has been put into the cooling system it is only necessary to fill it up with pure water to make up the loss through evaporation. While it is true that glycerine itself cannot be said to evaporate, yet it is carried off in minute particles in any steam which may be given off. Therefore, in the course of time, the proportion of solution would so alter that the freezing point would become higher, and unless more glycerine were added to make up for losses one might easily find the radiators frozen after a little extra frost.

About Picric Acid.

Less than a year ago it was asserted that picric acid might knock gasolene sky high, since which time nothing has been heard of it. Now a French chemist claims that five parts of a saturated alcoholic solution of this acid to ninety-five parts of gasolene produces an excellent working mixture, requiring considerably less air for its combustion and saving at least 30 per cent per horsepower an hour. Also that the resulting exhaust is almost odorless. So gasolene would still seem to be safe, as 5 per cent of picric would not cut much figure any way.

Letts Explains Some Things.

W. M. Letts, of London, who sells Locomobiles to confiding Englishmen, is in New York for a short stay, but will return to London in time for the show. Mr. Letts offers the interesting statement that the British are taking more kindly to American machines and that there is plenty of room there for good machines. He says that any kind of a good machine will sell there, but still he sold as many Locomobiles this year as he did last. The chief demand in England formerly was for French cars, but this, he says, is now being changed and the Napier is becoming the most popular, because of S. F. Edge having won the Bennett Cup with one.

Concerning the tale of the tubs told recently in The Motor World, in which an Englishman explained how ingeniously Mr. Letts avoided stops in the endurance contest by having his carriage circle about tubs while taking water, Mr. Letts said that it was all wrong. The rules prohibited the use of tubs, so he used pails, but they were not set in a row along the road, he said. Mr. Letts took exception to the story, but did not explain just how he did manage to get a car through and get a certificate.

Lubrication in Cold Weather.

Cylinder oils which have been found to feed perfectly through drip feed lubricators and their leads during the warmer months of the year will, in many cases, require to be replaced by somewhat thinner oils when the temperature is low, particularly if the car is stored in a cold place and the oil tank is so situated that it is not affected by the heat radiated by the engine or water tank. Cylinder oil, which, in use with drip feed cylinder lubricators, dripped nicely at nine to ten drops a minute in warm weather, will only feed at half that speed in colder weather, and it is necessary to use a thinner variety. Automobile owners should look to their lubricators and verify their action, watch in hand, now that the winter is here.

How They Help Fire Engines.

The boilers of the steam fire-engines used in Hanover, Germany, while they are in the stations are kept continuously heated by gas. The steam is maintained at a pressure of nine pounds per square inch. On the engine is a tank containing about twelve gallows of methylated spirit connected with a cylinder of liquid carbnic acid. The pressure exercised by this drives the spirit into the furnace on the sounding of the fire alarm, and in six minutes brings up the pressure of steam to 84 pounds. Heating the furnace during the run to the scene of the fire does away with noise and smoke. Immediately on arrival at the conflagration the ordinary fuel is used to maintain the steam pressure.

For the Nice festivities next spring a French concern, Gobron-Brillie, are said to be building cars fitted with 100 horsepower engines, four cylinders and eight pistons.

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Is There Room for her?

The feminine professional chauffeuse and mecanicienne—is there a field for her? Can she be entrusted with the task of driving and generally caring for the motor car of a fellow woman with advantage to the latter as well as herself?

These questions are brought up by the plea of an Englishwoman to be given a trial in such a position.

Hitherto her family circumstances have been easy and comfortable. She has driven her father's car during the past three years, but his sudden death and the overwhelming fact that they have long been "living above their means" make it imperative for all who are of an age to do so to turn out and earn their own living.

"I have been trained to nothing which would gain me a decent salary," she says, 'but I understand our car through and through, and if I could hear of a probable post I would also try and get permission to take a course of practical repair-doing at some motor works.

"I have a natural taste and talent for mechanics, and with a little more training in the technical side of the car am sure that I should make an excellent mecanicienne and driver. I must live an outdoor life, and I do not see why a girl chauffeur should not be as acceptable at a country house as a girl gardener, many of whom find well-paid employment. All the three years I have driven the car I have never had one accident, and I am 'just as good as a man' at repairing tires."

Compression in High Altitudes.

A motor which shows a certain compression at sea level will not, if carried to a higher altitude, show so high a compression, and the loss will increase with the height above sea level to which it is carried. The cause of this is obvious. Since the piston displacement is constant, a full charge of rarefied air, when compressed, will not register as high a gauge pressure as would air of greater density.

Since the spark ignites the mass of mixture immediately surrounding it first, and the resultant flame must be propagated throughout the entire mass before complete ignition takes place, an autoist suggests that several sparks occuring simultaneously at different points in the explosion chamber would be more effective than anything yet devised, especially in high speed motors.

His Idea of Price.

Being asked, "What do you consider a moderate price for a car?" one maker is said to have replied: "Any price is moderate for a machine that will take you in one day further than a pair of horses could pull you in two days and will go back over the same ground the next day, while your pair would be in the hands of a veterinary surgeon."

If Ever You Rode a Bicycle

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1902.

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WEARIED OF WATERING

Tried Using a Collapsible Pail and a a Syphon; now Wants a Condenser.

"People advise me not to buy a steam car on account of the bother of filling the water tank so often," remarked a man who was about to become an automobilist to a Motor World representative, "but I can't see why that should be sufficient objection.

"They tell me that it takes, roughly, a gallon of water for each mile travelled, and that the water tank holds 25 gallons. Well, that is sufficient for 25 miles running; or, if you have to make a little allowance for the—well, the optimism of the salesman—we will say 20 miles. Now, why should there be any great objection to that? You can't drive a horse 20 miles without stopping to give him water and other things as well. And it is not often that you will want to drive more than 20 miles without stopping for something; and if you do stop what trouble is it to put in some water?"

Fortified by these self-directed arguments, the speaker bought his steam car. For a while he was taken up with the task of mastering the control of the car and of acquiring a fair knowledge of its construction, and so did not take any long runs.

When the period of his novitiate had passed, he approached the water filling task with enthusiasm. A collapsible pail was carried and used to transfer the water from the trough or other recepticle to the water tank. By and by this became a little bothersome, and he invested in a rubber hose and syphon. This was found a great improvement, as the water ran into the tank itself after the arrangement had once been connected and started. But it was rather a slow process, and by and by the autoist came to the conclusion that the hose was too small in diameter, so he got a bigger one, with the result that there was some improvement.

Meeting him the other day, the Motor World man brought the conversation around to the water filling point.

"Do you know," the autoist confided, "this water matter is about the worst thing in connection with the steam car. In fact, it is a confounded nuisance, especially in cold weather. I am looking into the matter of condensers, and if one can be fitted to my car I think I shall try it."

Have a new Carburetter.

Homan & Shulz, agents for the dapper Northern, at No. 34 West Thirty-eighth street, New York, have brought out a new carburetter for light cars, which looks more than good. Commendable enterprise on the part of the agents is shown by their willingness, when it is desired, to put their new invention on the Northern cars without extra charge.

Goggles for Town and Country Use.

Much fun has been poked at goggled automobilists, who are frequently accused of using eye-protectors because they like to make themselves conspicuous. Particularly is this true when in cities. As a matter of fact, the eyes need more protection in town than in the country. In town the dust is unwholesome and chemically injurious, and his dust is kept in perpetual circulation by the traffic; but in the country the dust (when there is any) is left behind, and a journey can be made without the use of glasses, until almost in town, when it is found that the eyes begin to "smart." Without goggles the eyes "run" continuously, and at the close of a long ride, and for several days afterward, grit is found exuding from the corners of the eyes, especially in the mornings, on awakening from sleep. The wearing of the glasses a portion of the day and then omitting to put them on might cause neuralgia, and therefore if one can travel safely without their absence causing inconvenience it would certainly be an advantage.

Carbonization of Lubricating Oils.

The question as to what the tendency of gas engine oil to carbonize should be attributed is an exceedingly difficult one, and suggests a prior question, viz., whether the carbon found in gas engines proceeds from the fuel (gas, oil or gasolene,) or from the lubricant. In the case of a gas engine the relations of gas and of lubricating oil used, gas being reduced to actual weight in accordance with its known specific gravity, are about 96 to 97 per cent of gas against the balance in lubricating oil. Analysis shows that the composition of town gas, or of gases from mineral oil or from spirit, closely approximate one another, viz., hydrogen, say 84 per cent, carbon about 16 per cent; and, on this assumption, it seems not unfair to suppose that the bulk of the carbonaceous deposits which are found in gas and oil engines is due to the fuel rather than to the lubricant.

To Discuss Debased Alcohol.

Many applications are being received for permission to take part in the forthcoming International Congress at the Paris Automobile Salon on the "Uses of Debased Alcohol." The chairman of the organizing committee calls the attention of applicants to the necessity of specifying the section in which they desire to be placed, viz.: automobiles, fixed motors, physics, chemistry and economical questions.

But it is the Proudest Moment?

"When a man has lain on his back on the ground under an automobile and has been thumping pipes and tightening clutches, with the oil, grease and water trickling down his neck, and he gets into the machine, if it goes it is the proudest and happiest moment that can come to any human being," is the way Frank Miller, a member of the Automobile Club of Bridgeport, Conn., sums the matter up.

CAN'T ABIDE CRANKS

User of Gasolene car Sight for a Substitute for Them in Starting.

"After all it is the little things that count," remarked a man actively identified with the manufacturing end of the industry. "A little defect or shortcoming will frequently irritate more than a broken shaft, a smashed wheel or some other serious trouble.

"To my mind the starting mechanism of a gasolene car is about the most indefensible thing about it. To have to get out a crank and wind up the machine every time you start is an infernal nuisance. Not even the insignificance of the mechanism redeems it. In the perfect car, the car of the future, it will have no place. Some one will come forward with a device that will make the starting as easy as pressing a button. That I feel as certain of as I do that the gas engine of that same future will be infinitely more flexible and controllable than it is at present.

"It positively makes me sick every time I have to turn the crank. It is the work of only a few seconds, of course, and when the knack is acquired there is no trouble to get explosions inside of half a dozen turns. But it is distasteful to me to think that every time that engine has to be started the crank turning process is necessary."

Phenomena of Ignition.

Referring to the temperature at which gasolene, vapor and air would ignite, the following phenomena is observable: 1st. Failure of gasolene vapor and air to ignite at even partial red heat. 2d. Ignition of lubricating oil under similar conditions. 3d. Automatic ignition of petrol charges in water-cooled motors at comparatively low temperature.

The conclusion to which these phenomena point is, that the automatic ignition of gasolene charges is due, not to compression or temperatures attainable under running concooled motors because the oil used has a comparatively low flash point; and it occurs in air-cooled motors at a higher temperature because the lubricant employed has a higher flash point.

The arguments that ascribe premature ignition to the flashing or burning of the lubricant, might be countered by ascribing it to incandescent carbon in the cylinder or ports. It is quite possible that this also may be a cause of pre-ignition. But it does not fully meet the case. As incandescence would be continuous, it should also lead to continuous pre-ignition; it should make pre-ignition independent of the amount of lubricant used, but the reverse is the case; it should confine premature explosion to cases where such deposit is present, but this is not in accordance with fact.

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Touring in Algieria.

There seems a likelihood of the automobile becoming for pleasure purposes at least a "ship of the desert." Some time ago an enterprising French promoter of tours mapped out a motor car "circuit" through the North African States. Now, writing from Mustapha, in Algeria, to the president of the Touring Club of France, M. Le Normand de la Fosse states that the project is in good shape for being realized. The suggestion originated with Baron de Crawhez and the "winter committee" of the French colony on the southerly shores of the Mediterranean. Already steps have been taken to secure the patronage both of the French Automobile and Touring Clubs. M. de la Fosse states that the Prefect of Algiers has given a report in favor of the "Circuit"; he is awaiting a report from the Prefect of Oran, which has been laid before M. de Maisonseul, the President of the Court of Assizes. M. de la Fosse has further entered into negotiations for the chartering of a vessel that will suit admirably for the transport of the tourists and their cars. This was the greatest difficulty to be overcome. If the "Circuit" is duly authoized on both sides of the Mediterranean M. de la Fosse believes that numerous tourists and constructors will respond to the appeal for support. The advent of the automobile in the domain of the sons of Ishmael is one which will cause many of the gray-beared Arab sheiks to open their eyes with wonder.

To Help Steamers Start.

Should an engine prove refractory in starting in cold weather, gasolene squirted into the cylinders very often overcomes the difficulty; or, if the mixing chamber has a removable top with a cone, warming up the cone will nearly always effect a ready start.



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DIAMOND CHAIN FACTORY— Indianapolis



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The Week's Patents.

715,784. Puncture Healing Compound. Lewis C. Grant, Cleveland, Ohio, and Nelson B. Chester, Caldwell, N. J. Filed August 15, 1902. Serial No. 119,785. (No specimens.)

Claim—A compound for the purpose described composed of asbestos, borax, mica and cork, substantially as set forth.

715,954. Vibration Equalizing Support for Motors. Adrien Bochet, Paris, France. Filed March 23, 1901. Serial No. 52,501. (No model.)

Claim—1. A motor vehicle having longitudinal frame members connected with the axles thereof, transverse supports connected with said frame member, a motor mounted in said supports and adapted to swing laterally, said motor being provided with laterally arranged supplemental supports loosely connected therewith and with springs which are connected with the axle centrally thereof, substantially as shown and described.

716,031. Pneumatic Tire. Henry N. B. Good, London, England. Filed March 17, 1902. Serial No. 98,574. (No model.)

Claim—1. In a pneumatic tire, the combination with the outer flexible covering, of an inner inflatable tube provided with a plurality of slits, valves inserted in said slits and secured to the interior surface of said tube, and means for closing said valves for separating said inner tube into a plurality of inflated compartments.

716,065. Automobile. Joseph Ledwinga, Chicago, Ill., assignor, by direct and mesne assignments, to Imperial Electric Motor Co., Chicago, Ill., a corporation of Illinois. Filed January 31, 1902. Serial No. 92,050. (No model.)

Claim—1. In a vehicle, the combination with one of the wheels thereof of a motor member arranged at the inner end of the wheel hub, means for mounting the motor member so that it in effect forms a single unitary structure with the wheel axle, and a pivotal connection between said unitary structure and the axle member, whereby the motor member and wheel together can be turned relatively to the axle member, substantially as described.

716,076. Brake. Leo Melanowski, Cleveland, Ohio, assignor to the Winton Motor Carriage Co., a corporation of Ohio. Filed June 6, 1902. Serial No. 110,525. (No model.)

Claim—1. A brake of the character described, including a stationary member, a brake band, a movable operating member connected directly with one end of said band, the opposite end of the band laterally movably connected with said stationary member, and a coacting surrounding brake member.

716,083. Tire Repairing Compound and Process of Preparing Same. Milton McWhorter, San Francisco, Cal., assignor of seven-tenths to James Uhler Hastings, Edward McGary and Usher L. Davies, San Francisco, Cal. Filed May 26, 1902. Serial No. 109,077. (No specimens.)

Claim—1. A tire repairing compound consisting of a residue derived by distilling asphaltic petroleum below 350 degrees Fahrenheit, of crude rubber and essential oil of sassafras, substantially as herein described.

716,099. Tire for Motor Vehicles. Max Polack, Waltershausen, Germany. Filed June 9, 1902. Serial No. 110,942. (No model.)

Claim—1. A vehicle tire having a portion of its sides constructed slightly convexo-concave in contour, the outer face of said convexo-concave portion adapted to straighten when the tire is compressed.

716,113. Driving Mechanism of Motor Cars. Albert Schmid, Havre, France. Filed January 28, 1902. Serial No. 91,607. (No model.)

Claim—Motor car driving mechanism comprising an internal combustion engine, a dynamo having a double wound armature and driven by said engine, said dynamo having two commutators and two sets of brushes, a pair of electric motors connected to the dynamo and arranged to drive the vehicle, and a controller arranged to change the connections of the dynamo, substantially as described.

716,168. Vehicle Brake. Augustus A. Ball, jr., Lynn, Mass., assignor to Elihu Thomson, Swampscott, Mass. Filed January 27, 1902. Serial No. 91,299. (No model.)

Claim—1. In combination, a revolving element, a brake therefor, a motor which is separate from the said element for applying the brake, a body of non-compressible fluid which is independent of the motor for regulating the setting of the brake, and a manually actuated device by means of which the fluid is controlled.

716,183. Steering Column for Automobiles. Henry B. Brazier, Philadelphia, Pa. Filed August 13, 1902. Serial No. 119,490. (No model.)

Claim—1. In a steering column for vehicles, a standard or support, means for operating the steering mechanism, means for controlling the mechanism for changing the speed of the vehicle, means for operating the governor, means for controlling the circuit breaker, and means longitudinally movable within the others for actuating the alarm, said parts being arranged adjacent to each other and freely movable with respect to each other, and means for counterbalancing the weight of the speed controlling means.

716,314. Igniter for Hydrocarbon Engines. William W. Tuck, Richmond Hill, and August Wassmann, Astoria, N. Y., assignors to Abbot Augustus Low, Brooklyn, N. Y. Filed December 18, 1901. Serial No. 86,356. (No model.)

Claim—1. The combination with the ignition chamber of a gas engine, of an ignition plate disposed centrally within said chamber, with its outer edge substantially concentric with the walls of said chamber and having integral extensions passed through insulated openings in the opposite walls of said chamber, and electrical connections with the outer ends of said extensions, substantially as and for the purpose specified.

716,143. Motor. Basil V. Szabo, Chicago, Ill., assignor of two-thirds to Ferdinand Siegel and Joseph Alexander, Chicago, Ill. Filed March 5, 1901. Serial No. 49,833. (No model.)

Claim—1. In a rotary motor, an axle or shaft having two concentrically disposed flanges thereon, a drum eccentrically fixed between said flanges, a cylinder inclosing the space around the drum between the flanges and having bearing on the shaft or axle outside of the flanges, and movable plates held against the surface of the drum and fitted closely between said flanges.

A Fable and its Morals.

Once on a Time there were Two Young Men, each of whom Bought an Automobile.

One Young Man, being of a Bold and Audacious nature, said:

"I will make my Machine go so Fast that I will break all Previous Records."

Accordingly, he did So, and he Flew through the Small Towns like a Red Dragon Pursuing his Prey.

Unheeding all Obstacles in his Mad Career, his Automobile ran into a Wall of Rock, and was dashed to Pieces. Also, the young Man was killed.

The Other Young Man, being of a Timorous and Careful Disposition, started off with great Caution, and Rode at a Slow Pace, pausing now and then Lest he might Run into Something.

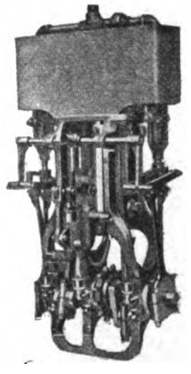
The Result was that Two Automobiles and an Ice Wagon ran into him from behind, spoiling his Car and Killing the Cautious Young Man.

Morals: This Fable teaches Us, The More Haste the Less Speed, and Delays are Dangerous.—Carolyn Wells, in Smart Set.

"Chauffeur" too Much for Berry.

The word "chauffeur" has aroused the ire of Alderman Berry, of Kansas City, Mo. It is too "Frenchy" to suit him. In a discussion of an ordinance pending before the board of which he is a member the belligerent lawmaker wanted an amendment to the ordinance designating the operators of the machines as "gripmen."

"That is something easy," said Berry, "and hasn't got any frills to it."



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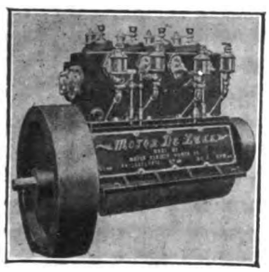
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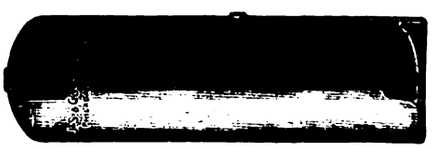
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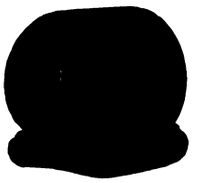


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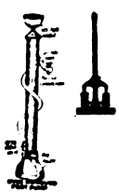
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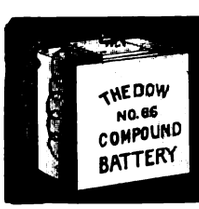


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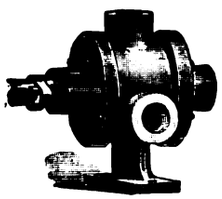
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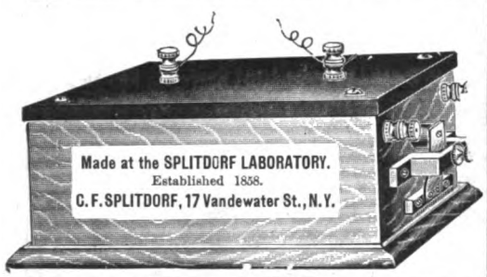
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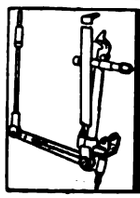
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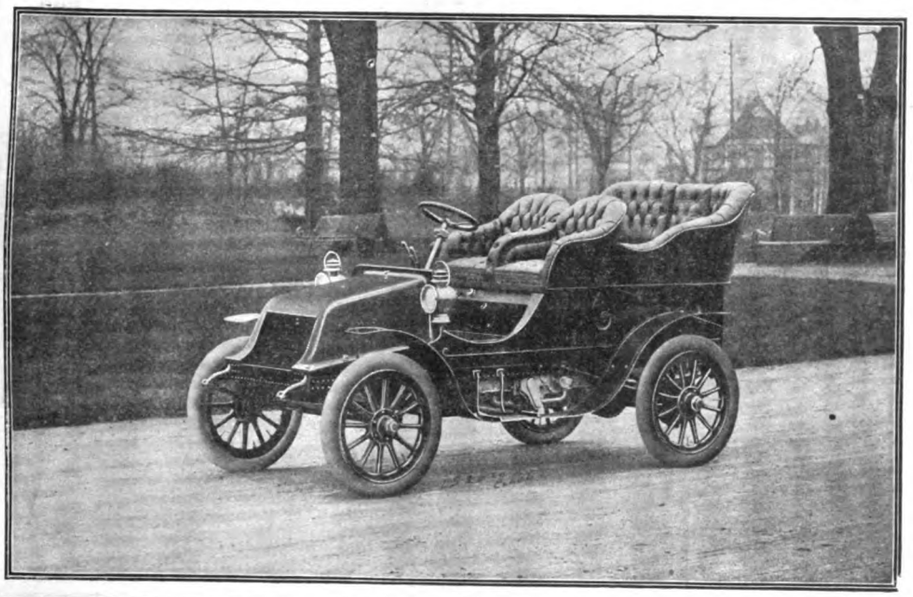
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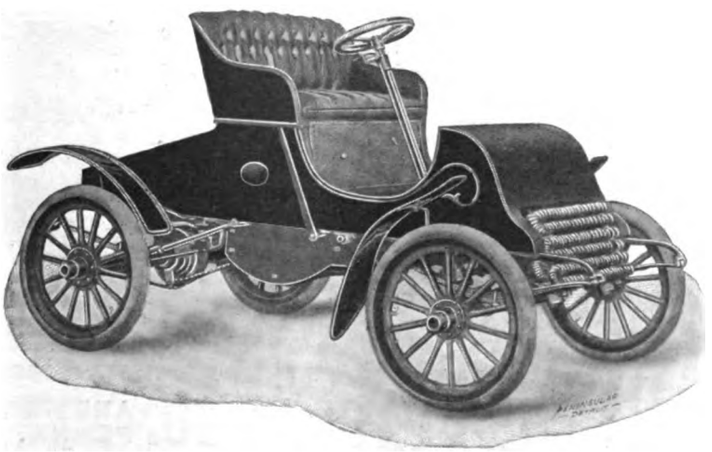
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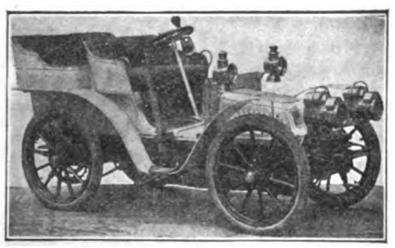
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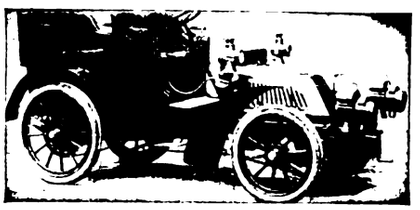
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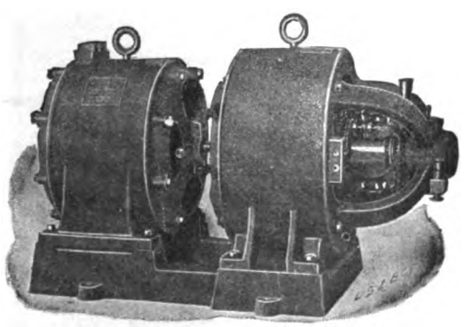
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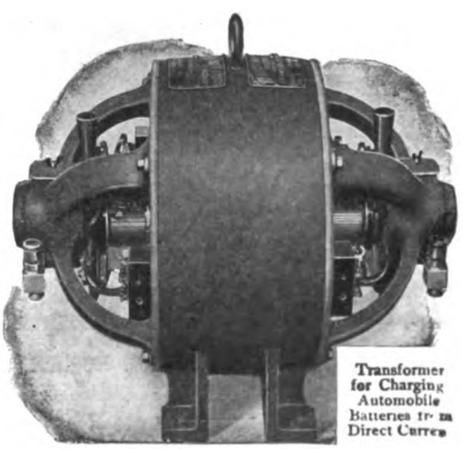
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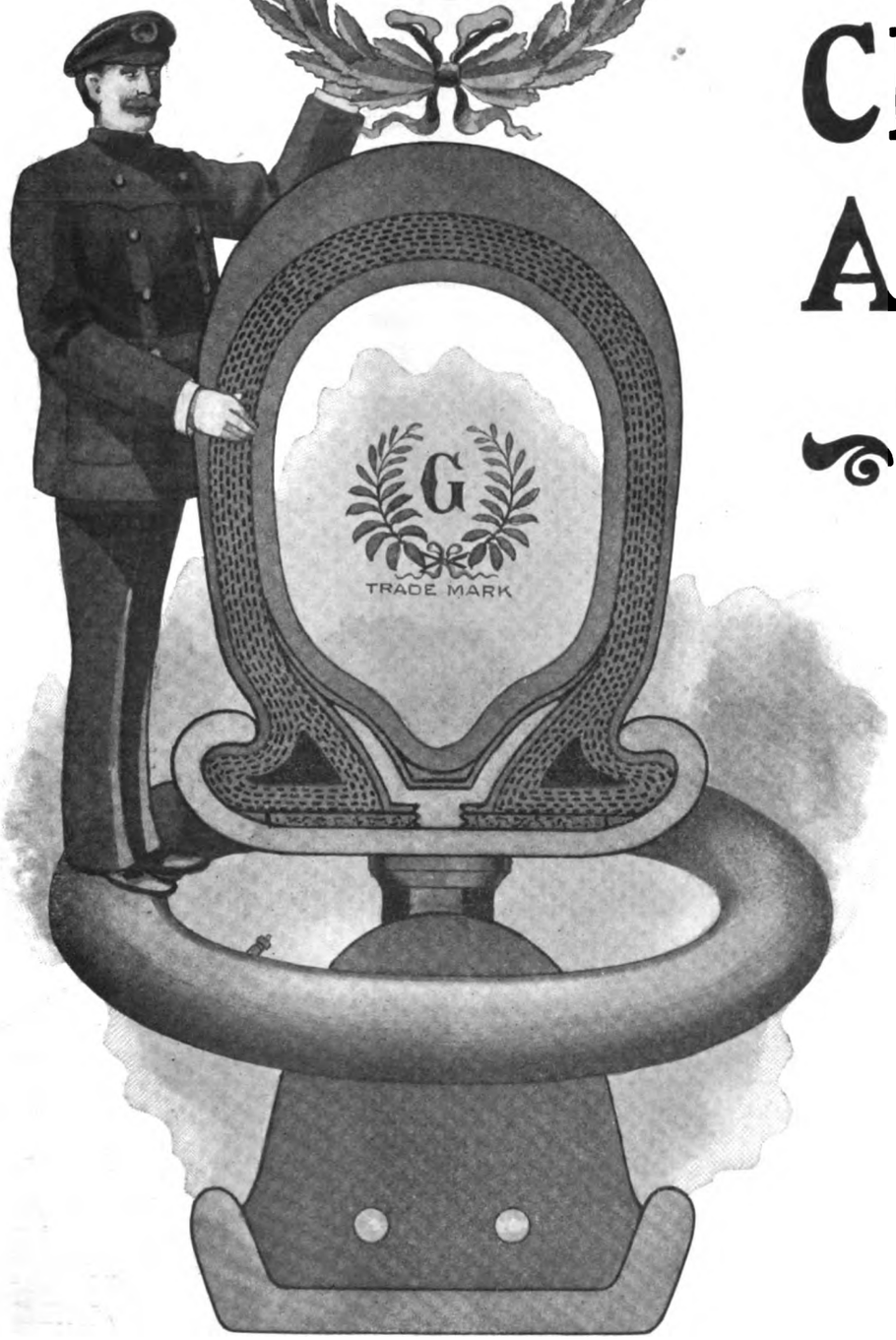


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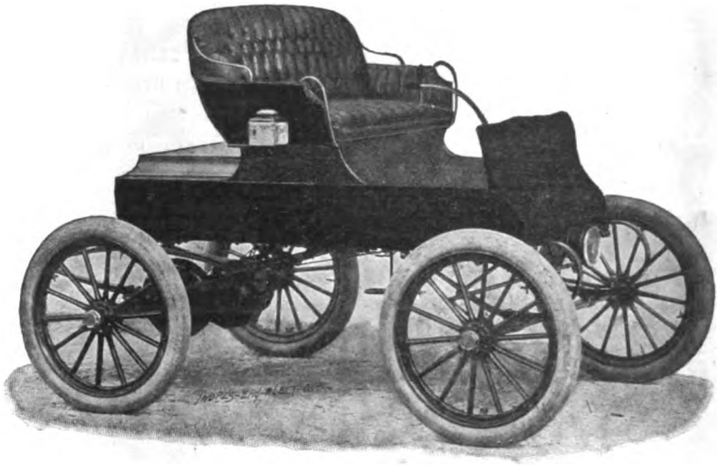
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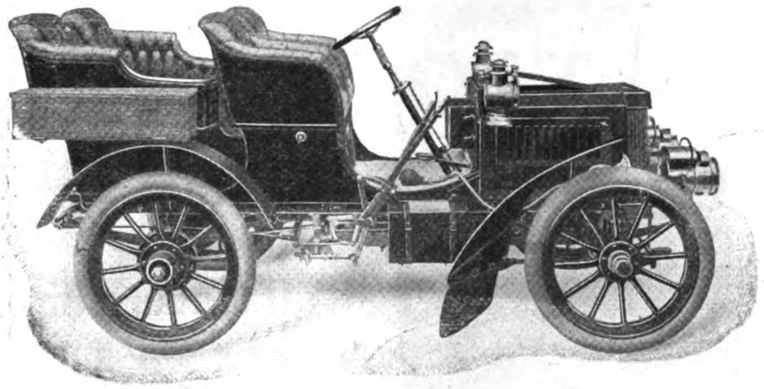
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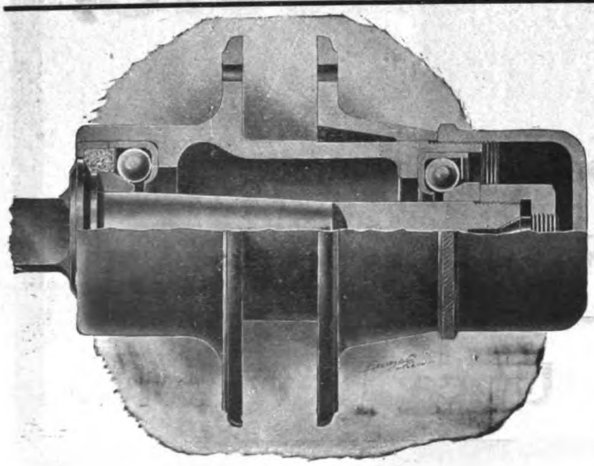


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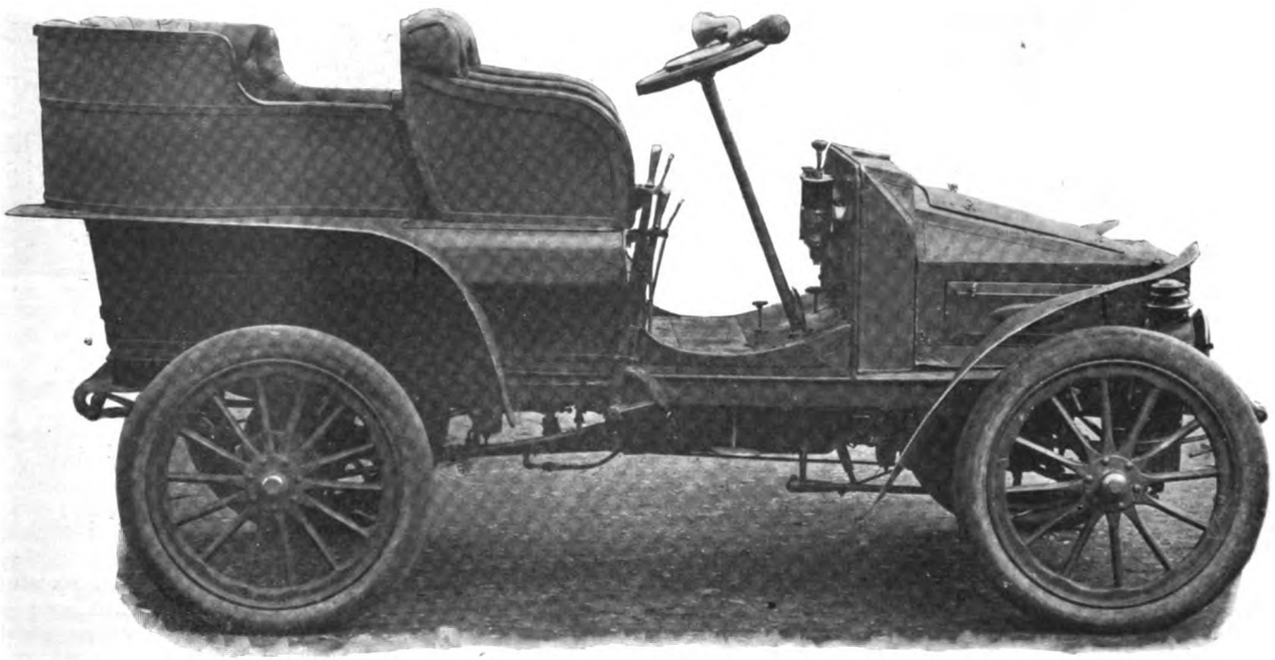
Volume V. New York, U. S. A., Thursday, January 1, 1903. No. 14

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It bears not the slightest outward resemblance to the White car that has become so familiar during the last two years. Not a vestige of the horse drawn vehicle remains.



The shaftless carriage, as some one dubbed the average steam vehicle, has gone, and in its place is a car designed on the most approved European lines—a long, low car of massive construction, bonneted, artillery wheeled, tonneau bodied—in short, a car of the type that has commended itself by a sort of survival of the fittest evolution to Continental automobile makers as the best and highest form of the art.

The car does not come altogether as a surprise. It was known that the White people had something good up their sleeve, ready to be shaken down at the proper time—that period just before the show, when the automobile world is hungry for novelties.

It is fitted with a compound engine, generating 10 horsepower, and placed in front under the bonnet. The time tried semi-flash system of steam generating is, of course, employed, and water and gasolene tanks of ample capacity—holding fifteen and ten gallons, respectively—are carried, the use of the well known White condensers doing away with any necessity for frequent refilling of the former. The arrangement of the tanks and other impedimenta is so made, the bonnet in front especially conducing to this end, that there are no unsightly protuberances to mar the harmony of the lines or be in the way.

The strength and stability of the car are self-evident. It has a wheel base of 6 feet 8 inches, and a tread of 4 feet 8 inches, 30-inch artillery wheels and 4-inch tires. The extreme width of the car is 5 feet, the extreme height 5 feet 2 inches, and the weight, with tanks filled, 1,650 pounds.

The car is designed to seat four passengers comfortably, the tonneau body being of the roomy, high backed, finely upholstered type found on the best foreign cars.

The price of the touring car has been fixed at $2,000.

A peculiar significance attaches to the appearance of this new car at this time because of a rumor which comes from a very trustworthy source to the effect that the White concern is at work on a car that will be a candidate before the race committee of the Automobile Club for selection as a competitor for the Bennett Cup.

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THE WINTON OF 1903

Best of the Famous Line of Cars—Its Many Features of Interest.

A bigger, better and more powerful car, a vast improvement over even the notable touring car of the present season, must be the verdict of any candid person who examines the new Winton production.

It has become an axiom with the connoisseur that an excellent racing car makes an equally excellent road car. It has proved no exception in the Winton case.

Last summer, when the Cleveland concern put forth the subsequently famous "Pup," it was known that that car was really the result of the skill and "know how" possessed by the Winton designers and workmen, exercised to produce a car that would be the fitting successor of the touring car then in the heydey of its successful career—in short, a new and improved touring car. The expectations thus formed of the car were not disappointed. It proved itself to be on the track what its builders hoped it would be; and the improving process continued and the car itself rounded into a perfected road vehicle, it is now presented to the public for its verdict.

Like the 1902 model, and yet strikingly different in some respects, the car impresses one at first sight as a marked step forward.

It is handsomer, roomier, better finished, more powerful than its predecessor—a more finished product in fact.

The motor develops 20 horsepower, instead of 15, as in the present car. It is the double opposed, water cooled, standard Winton type, with cylinders cast from the best grade of hard, gray iron, a superior metal for gas engine construction. The top and bottom covers of crank pit are cast aluminum, so alloyed as to combine lightness and present exceeding strength.

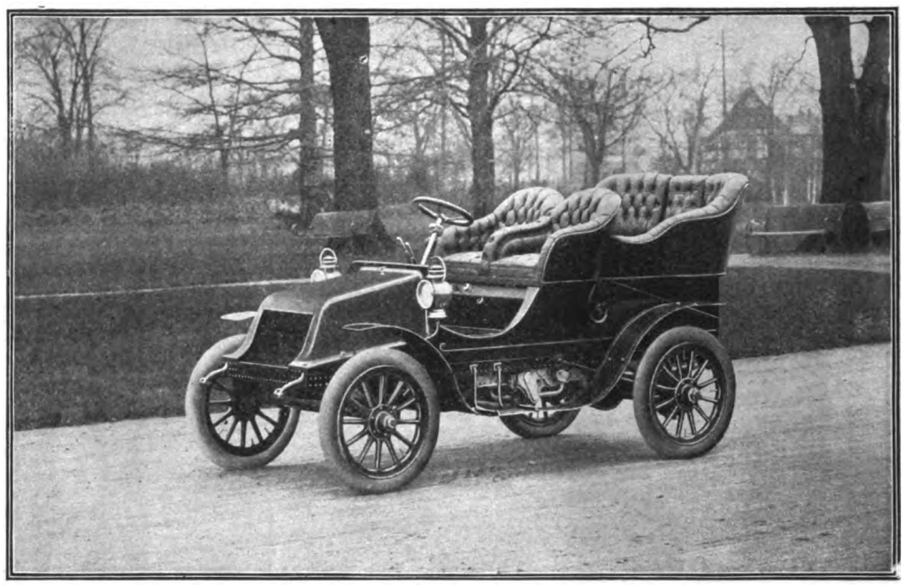
The cranks are secure within this housing, and as a consequence no oil from the motor will leak away and drip upon pavement or carriage house floors, nor is it possible for dust to work in and do injury to motor bearings. The crank case cover may be easily removed to permit a ready inspection of interior.

The connecting rods are of drop forged, open hearth steel, with phosphor bronze bushings, and the crank shaft is forged in one piece from open hearth steel, and is sufficiently heavy to withstand any service. The accurately proportioned crank shaft bearings are of phosphor bronze. Pistons are ground to size with micrometer gauges, and the boring of cylinders is accomplished in the same manner. Piston rings are cut before being turned to size, accomplished by the use of special fixtures, insuring an effective and even bearing throughout the entire circumference. The air pump connecting rod is well secured to a lug, cast solid within the forward motor piston.

With the transmission employed nearly all of the power generated is transmitted to the driving wheels. The transmission gears are contained within an oil tight and dust proof case. Steel gears operate against bronze, and the steel gears are cut from drop forged disks. The phosphor bearings are very carefully made and accurately proportioned. The differential gear is of the spur type, contained within an oil tight drum.

The driving chain represents a threefold increase in strength and durability. The sides and rollers are made of best cold rolled open hearth stock, the pins of nickel steel.

The new ignition system possesses many features of merit. It is simple and wonderfully efficient. Everything in the circuit is protected from electrical losses due to the presence of moisture and oil. The car is



equipped with two sets of batteries—one being held in reserve.

There is but one coil used and no vibrator to bother about. The contacts on the circuit breaker both move and are self-aligning and adjusting. The type of spring used in the breaker is such as to preclude possibility of breakage. Contacts are so constructed as to give positive results. They will free themselves of any foreign deposit which, if permitted to be present, would cause trouble. A heavy glass dial upon the breaker box makes it possible to observe the operation of contacts without removing box cover.

The transmission gears are incased and run in an oil bath. For the motor there is a reservoir beneath bonnet lid which is connected with the float distributing chamber by a brass tube. The float chamber is cast solid with crank pit cover. From the float chamber are feed pipes connecting with the several motor bearings, and the reservoir is so much higher than the float chamber that the gravity force makes a pump unnecessary. The float regulation insures an even feed of lubricant to the bearings. The differential gears are incased and packed with solid lubricant.

With a centrifugal circulating pump and an ample system of radiation a minimum amount of water is required. The water pump is driven by gear and its action is positive.

The steering gear is not rigid beyond the point of preventing shock upon the guide wheels being communicated to the steering wheel, or causing the car to deviate from its proper course. It is a development of the worm and segment principle. Steering joints are of the ball and socket type, adjusting themselves to all uneven road conditions. Steering post is of extra heavy gauge one and one-quarter inch steel tubing. Aside from the base bearing it has a strong support in the floor of car eight inches from the base. Steering wheel is heavy brass armed, with a mahogany finished laminated wood rim. Post is hinged near the top so that wheel may be swung forward to permit easy entrance to operator's seat.

The frame is of double angle and sheet steel securely riveted, with substantial cross braces. The strong iron box corner connections insure perfect rigidity to joints under all conditions of strain. The front axle is forged solid from one piece of best axle steel, and the steering heads contain phosphor bronze bushings, which give bearing to the pivot axles. The front wheels are equipped with double ball bearings. The rear axle is of the tubular tri-strut type, the live axle extending through from each rear wheel to the differential gear at the centre, where it is secured by means of a key and pin. The live axle revolves in parallel anti-friction roller bearings.

Semi-eliptic springs, both front and rear, are employed. Each spring is six inches longer than those in 1902 construction. They are also wider, much more elastic and so attached as to prevent shifting upon the axles. Tests with these springs have shown

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them to be admirably adapted for the special service imposed. They are very powerful, and at the same time so elastic as to insure maximum comfort in riding.

A special wheel, of the artillery type, is used. The spokes and felloes are of best grade second growth hickory, and metal hubs are used. The steel clincher rim is shrunk upon the felloe, but as a means of additional security tire bolts are used at each felloe joint.

In addition to the emergency brake there are two others, one acting upon each drum cast solid with the rear wheel hubs. These hub band brakes are operated by a single lever convenient to the left foot. This lever works against a ratchet, which permits of brake being set to hold car, forward or back, on the steepest incline.

The muffler insures a silence in motor operation that is altogether pleasing. It is equipped with a relief slide for use on track when it is desirable to "cut out." This slide is controlled by hand from the operator's seat.

All lumber in the body is air seasoned and of first quality. The ash frame mounts panels of poplar. These soft and hard woods are mortised securely with glue and screws. All outside joints are carefully avoided. The bonnet, excepting the side panels, is made of sheet aluminum. Front seat is divided, the divisions being sufficiently wide to insure comfort.

The tonneau is especially roomy, and will comfortably seat three persons. Backs are very high, and the top of door is flush with the top line of the tonneau. A third seat fits in the door space when door is closed. The lines of both front and tonneau seats are especially graceful.

Merseles is Out.

Theo. F. Merseles, vice-president of the International Motor Car Co., has resigned that office, the resignation taking effect today. He intends to devote himself to a wholly different line of business. Colonel Albert A. Pope is now president of the company, although A. E. Schaaf, the former head, continues in control of the factory at Toledo.

Date of N. A. A. M. Annual Meeting.

The annual dinner of the National Association of Automobile Manufacturers will be held on Friday night, January 23, at the Waldorf-Astoria. The annual meeting and election will be on Saturday forenoon, January 24, at Madison Square Garden.

Contraction in Canada.

Report has it that the Canada Cycle and Motor Co., of Toronto, is to absorb the Canadian Motors, Limited, also of that city. The latter named company does a considerable business in electric vehicles and storage batteries.

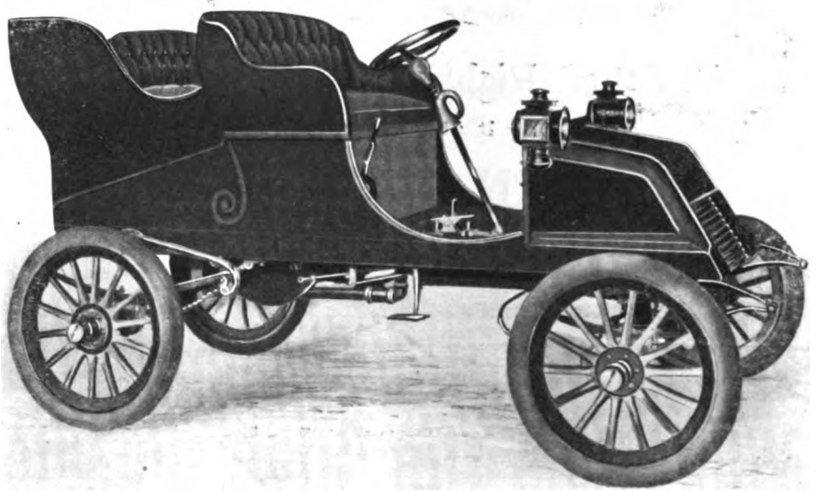
A local show for Indianapolis, Ind., is being talked of among the makers and dealers there. So far it has not got beyond the talking stage.

HERE'S THE GENERAL

Designed for the Man of Modest Means and Seems a Bargain at its Price.

From Cleveland, Ohio, that beehive of automobile industry, there came a short time ago another of that class of medium priced, pleasingly designed and well constructed gasolene cars that have done so much to make automobiling a popular pastime for people not millionaires, to wit, the General automobile, formerly known as the Cleveland, and the product of the General Automobile & Mfg. Co.

A roomy, comfortable, four passenger vehicle, the General car here illustrated, is propelled by a double cylinder horizontal



engine, with 4-inch bore and 4½-inch stroke, giving 8 horsepower. The cylinders are opposed, and so perfectly balanced there is practically no vibration. The transmission is direct for the high speed, with an adaptation of the sun and planet system for the slow speed. There are two speeds forward and one reverse, both of the former being controlled by one lever. On the slow speed the car will average a speed of from four to twelve miles an hour, and from fifteen to thirty on the high speed.

The steering is by wheel or side lever. The running gear is of the reachless pattern, with 72-inch wheel base and standard thread. Four 28-inch artillery wheels are fitted with 3-inch clincher tires, and are equipped with roller bearings.

The oiling is accomplished by use of a mechanical force feed lubricator, which gives the proper amount of oil at all times. All the gears are run in oil baths, and require no attention except an occasional renewal of oil. The power is transmitted by a roller chain to spur equalizing gear on the rear axle. The water is cooled by a radiator in front, and the circulation is secured by a Brown & Sharp force pump. The ignition is by jump spark and batteries. The weight of the carriage equipped with fenders, tools and all necessaries is approximately 1,100 pounds. The body is finished in seventeen coats of paint in either royal blue, automobile red, maroon or black. The trimmings are brass or nickel plated. The seats are upholstered in the best hand buffed leather in red or black, tufted or French style, to suit the purchaser. The price of the car is $900.

Electric Vehicle's new Depot.

The entire building at No. 134 to 138 West Thirty-ninth street, this city, will be occupied by the Electric Vehicle Co. as a New York branch as soon as the work of fitting up can be accomplished. It is expected that it will be ready by January 17, the opening day of the automobile show.

The building, which is just a few doors west of Broadway, has a frontage of 75 feet and a depth of 100 feet. It is an ideal building for the purpose, being one story in height, with immense windows and an imposing entrance. It will be handsomely fitted up, and a full stock of Columbia vehicles will be installed. There will be accommodations for nearly 100 of the latter.

Gasmobile Creditors get 10 Percent.

Creditors of the Automobile Club of America, Marion, N. J., will get a 10 per cent dividend as a sort of New Year's gift.

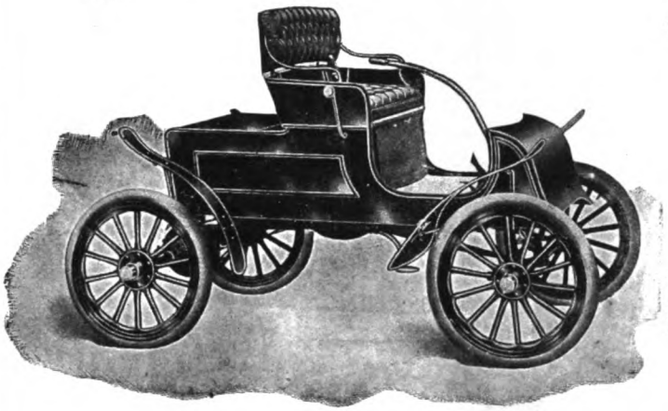
Vice-Chancellor Stevens signed an order on Monday allowing Henry C. Cryder, receiver of the company, to pay a dividend of 10 per cent to all creditors of the corporation. The report of the receiver up to date was offered for confirmation. It showed a total of $63,000 cash in hand.

Sherrerd Depue, counsel for some creditors, agreed to the dividend proposition, but he opposed the confirmation of the receiver's report. The court adjourned the latter phase of the matter for one week.

The gathering of chain makers in Cleveland, Ohio, as noted in these columns last week, did not take place for nothing. It was immediately followed by an advance in price.

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If you know a good Runabout when you see one



you'll probably agree with every other good judge in pronouncing

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P. DESMARAIS & CO., Bristol, Conn. BANKER BROTHERS COMPANY, Philadelphia, Pa. R. V. CONNERAT, Savannah, Ga.
OHIO MOTOR CAR CO, 317 Huron St., Cleveland, Ohio. NATIONAL AUTOMOBILE & MANUFACTURERS CO., 26 Fremont St., San Francisco, Cal.
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The Year.

"If drunk with sight of power, we loose wild
tongues. . . .
Lest we forget, lest we forget."

It is one of the customs of conventionality that is wholesome to pause before tearing away the last sheet of the calendar and consider the retrospect.

The small boy on his birthday feels his muscle, squares his shoulders, stretches to his fullest height and revels in thoughts of how big and strong he is. He is proud to be able on and after that day to say, "I'm ten, going on 'leven," and his mind is aglow with fanciful pictures of the great things he will do when he is a man. How like is the birthday spirit of the small boy to that of a youthful industry, such time as it completes a calender year, and, vaunting its rapid growth, steps forward with new models in a confidence almost arrogant. The automobile industry of America is yet in its adolescence. It has grown remarkably fast, but it has not reached the adult plane. Like the growing boy, it is swollen with pride because of its growth, and is looking forward to sweeping conquests. Beyond this the comparison fails, for the youthful industry has some adult attributes of mind that the boy has not. It is not possible for the boy to rise in philosophy above his conceit and reflect upon how much bigger and stronger he might have been at the year's end if there lay behind him less of wasted opportunity. He cannot estimate the significance of his shortcomings and make the appreciation of them a profit to him in the future. The old head of the infant industry can do this.

During 1902 giant strides of progress have been made in automobile sport and manufacture in the United States. There is ample reason for the producers of motor cars and for those interested in the sport to be proud of what has been achieved. On the threshold of the new year the country stands a challenger in the competitive market of the world. American cars are being forced into the markets of foreign nations, and we are about to send three homemade cars to champion the country's claims in contesting against an open field for the trophy which is emblematic of international supremacy. Established manufacturers have greatly improved upon their products, and new makers have sprung up with newer designs, and we are on the eve of an exposition at which all the improvements will be shown and the progress made will be vividly presented.

During the last year there have been many performances in the line of sport also which are causes for just pride. On track and road the records for all classes of cars, except the heavy gasolene type, have been reduced, and, in view of certain track performances, it seems probable that lack of opportunity for road contests is the single thing that has prevented the straightaway record for heavy gasolene cars from being held by a vehicle of American make. Contests to demonstrate reliability have returned results not simply gratifying, but so excellent as to be surprising to all engaged.

Yet in the contemplation of all that has been accomplished, and of the radiant prospect, it is well not to "loose wild tongues" of boasting. It is better to reflect upon the advantages that were offered and wasted and to consider how much is still lacking and still to be achieved; better to recall how much more might have been made of the opportunities—"lest we forget."

American automobile manufacture began with its European preceptor offering it five years of practical experience as an example. It is the American way to overtake and outstrip its preceptors, but this has not yet been the case in automobile production. No doubt it will yet be done, for while we are slow in getting under way, we gather headway most rapidly, and take the lead going into the stretch. But what a waste there has been! If in humble spirit all the teachings of what Europe had learned had been accepted, how much greater progress there might have been. The domestic manufacturer has little more than just begun to be receptive of teaching. There is many a note in the trade that does not ring true.

Most of the faultiness of American product is due not to inability or lack of resource, but to traits that are temperamental. The American habit of mind is to approach a goal by bounds. The essential truth of the motto, "The more haste the less speed," has not been learned. Laboring feverishly with a plethora of ideas, the mechanic finishes imperfectly because of the impatience to follow out some new thought. There is such a thing as too much originality and too much faith in the soundness of one's own inventions. The national character is that of the workman who continually conceives some new idea while working out an old one and rushes his work, or even stops in it, in order to try the new. So it is too often the case that American workmanship lacks completeness, thoroughness and finish. No man executes one idea to the fulness of its possibilities if another is being entertained and developed while working on the one. Such is the mental habit that begets fickleness and slouch work. American automobiles show some evidence of the trait. Novelty and variety are in greater proportion than substantiality. More sincerity, more patience, more faithful and receptive plodding will be better than more ambition, more novelty and more haste. Our machines show this, and the history of the industry shows it. It would have been better if we had earlier learned to take what had been done by foreign makers as a model, not in servile imitation, but in the proper spirit of tyros. Building upon the experience of others, rapid improvement would have been inevitable, and they would have had a secure foundation. The scrap heap of our early attempts at originality is a big one. This is a lesson of the past.

It is not the time for bombast when a re-

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trospect shows as much of failure as success. Even though success is often built on failure, it is hardly the material to select for foundation when choice is offered. Much of the failure in motor vehicle construction can be traced to a wilful and headstrong attempt to depart from proven principles in order to experiment with self-conceived theories. If the number of manufacturers has largely increased during the last year, there is a record of almost as many who have experimented mechanically and commercially to the end of their resources and then dropped from sight. If there are a greater number of exhibitors at the coming show than ever there was, who is there to doubt but what several of them will be missing in 1904? Enough new ones will spring up to more than replace them, but all goes to show that we are not yet through with frivolity and waste. If there have been new records made, more than one of them has been made with vehicles not suitable for mercantile offering, and the building of which did not aid in practical constructional progress. If there have been reliability contests which yielded highly praised results, it is well to remember that the tests were but child's play as compared with runs that in Europe are accepted as commonplace. If the social elements of the sport have been well organized into clubs, and the regulation of racing begun, there is still much to be desired in the spirit of the organizations, in the concentration of their efforts for good roads, and in the races, rules and methods of their administration. If the manufacturers have been organized into a protective and aggressive body, there is still very much to be desired in the harmonious, progressive and effective conduct of its affairs.

All this in the retrospect can be reflected upon without inducing a spirit of pessimism, and it is not mentioned with any such spirit. It is well not to forget in order to correct, yet there has been genuine and commendable progress, and the outlook is clear for a Happy New Year.

In many respects the last year differed markedly from its predecessors. It was distinctly a year of progress, and, to a lesser extent, of prosperity for the industry as a whole. Experimenting was not entirely foregone. But it played a smaller part than heretofore. Most makers knew at last what was best or, pretty nearly the same thing, what was wanted by the purchasing public. Consequently they set themselves to produce it.

A resume of the exhibits of makers at the three New York automobile shows—two already held and the third scheduled for this month—will illustrate this point.

At the first show, that of November, 1900, twenty-eight makers exhibited, eight of whom had withdrawn from the field—whether by failure, absorption or otherwise—within a year. In 1902 there were thirty-six makers showing, only five of whom have given up the ghost since, and most of them were in distress at the time of the show. For the forthcoming show fifty-six makers have taken space, no less than sixteen of them having come into being within the year. Of these, how many will have survived when the roll is called twelve months hence? Time alone can answer. But assuredly some of them will fall by the wayside.

This unusual stability was unquestionably due largely to the success—pronounced or moderate—that attended the efforts to produce the sort of cars that was wanted. The demand has crystallized into two widely opposing and differing tendencies—the one a runabout type, cheap, simple and easily handled; the other designed on European lines, imposing in whatever aspect viewed, a veritable road locomotive, powerful, speedy and costly.

To say that there is no room for anything between these two types would be going much too far and fast. There is considerable between, and probably will continue to be. But that does not detract from the accuracy of the statement made. The lines of demarcation have been drawn, and sides are rapidly being taken. Runabouts at less than $1,000, touring cars at $2,000 and upward—these are the chief lines of development, and along them much the greater portion of the industry will be found working during the next few years.

These tendencies are radically opposed in every way. One represents the European way, the other what seems destined to go down in history as th American method. The former is extolled to the skies, claimed to be the only defendable way, progressive, logical, inevitable. The latter is defended feebly and perfunctorily, acknowledged to be out of "fashion"—and yet persisted in, and, if anything, growing in popularity.

The truth of the matter is that there is reason for the existence of both types. Each has its advantages and disadvantages, its advocates and opponents. This is proved conclusively by the fact that each year the types get further apart. The features complained of in both are more and more emphasized, their simplicity or complexity, respectively, for example, resolved into something still more simple or complex than it was before. In this makers and users are only logical. If a certain thing is good more of it would be better, and this more is forthwith added. Consequently the gulf widens perceptibly.

If the past year witnessed the initial steps in the direction of adopting European designs and methods, it also saw the practical culmination of its opposite movement embodied in the runabout type of car.

Two years ago such cars were underpowered and frequently underweighted; wheel bases were too short, and in reliability, stability and simplicity there was much to be desired. At the 1901 show much of this was changed, and during the last season the alterations made were given a working trial and were abundantly justified by the event. At this time comparatively few shortcomings are properly chargeable against them, so great has been the improvement.

Changes that mark epochs are sometimes made with great rapidity. One short year ago there were not wanting observers to predict that the decline and fall of the steam car had set in. To-day it is pretty thoroughly rehabilitated and strong in popular favor. Mismanagement and mistakes gave it a bad name; new methods and new cars have reversed the situation.

In electric vehicles there was no lost ground to recover, and the progress has been steady. Battery efficiency plays the most important part still, and while the great strides noted at the end of 1901 have not been duplicated, there has been undoubted improvement.

During the last year we have been honored with a most unusual share of the public attention—a publicity that carried with it penalties as well as privileges. All eyes were on the automobile, or so it seemed, and the iron hand of the law was also felt all too frequently.

Nothing could exceed the severity of the treatment accorded automobilists at the hands of a portion of the public. Provoked by the actions of a few inconsiderate and reckless users, an outcry, violent and long sustained, was raised, starting with the yellow journals and participated in by others that are not usually classed as saffron. For

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a time it seemed as if every man's hand was against the new road vehicle. A flood of legislation, municipal and State, followed, and was accompanied by petty persecution, notably in Long Island, Yonkers and other places.

Like all such ebellutions, this one partly burned out in a comparatively short time, spending itself largely by its own violence. The automobile ceased to be a nine days' wonder, and there came a lull, let us hope a long one, in the tide of legislation. While there is still much of a harassing nature ahead of the automobile, it is reasonably certain that it will in future be permitted to take its place in the world's political economy as a useful part thereof.

A year ago the exportation of American made automobiles had not much more than begun. A few concerns had opened up foreign connections, and were just beginning to perceive the possibilities of the trade.

Since then an advance all along the line has been made. An established and steadily increasing trade has been built up in European and other countries. Shipments are made almost daily, and the volume of business for the year bids fair to approach the million-dollar mark. Steam and electric vehicles have so far been the chief beneficiaries, although American gasolene cars have also made a good name for themselves in some quarters.

A notable change has come over the tire situation. Where ae year ago the detachable type was in a decided minority, it has advanced by leaps and bounds, until it now falls but little short of dominating the trade.

Whether or not this popularity is destined to be permanent it is not easy to say. By some it is regarded as but one more step in the direction of recognizing the leadership of Europe, where detachable tires have always been almost universal. A more probable explanation is the desire to find a better tire than was obtainable, a desire seemingly gratified by the adoption of one radically different.

However this may be, detachable tires form the equipment now most favored and most seen. A year hence we shall be able to forecast their future more accurately than now.

For the departed twelvemonth a better showing in the way of speed trials, hill climbing, reliability and other tests is afforded than for any previous year.

The main interest, of course, centres in the one-mile and one-kilometre straightaway record, and those do not belong to America. It was August, 1902, before the record of 0:51 4-5 for the mile, made by Fournier on the Coney Island Boulevard in the fall of 1901, was shaded. It was W. K. Vanderbilt, jr., who made the first cut in the record. He carried it to 48 2-5 seconds, and made the kilometre in 29 2-5 seconds. Fournier lowered the figures in November to 47 2-5 seconds, and a few days later "Angieres" made it 46 seconds flat. The kilometre record of 29 seconds has been made by both "Angieres" and Fournier.

On this side of the Atlantic glory enough for a new industry has been gained. In May the Automobile Club of America promoted a "non-stop" contest of 100 miles to Bridgeport and back that was the first truly successful endurance competition held. The result was one that testified to a higher degree of efficiency and reliability in domestic machines than had been supposed. Of the fifty-three starters forty-four covered the entire course and twenty-eight got certificates. This affair showed also a very low percentage of gasolene consumption.

On May 31, the day after the reliability run, came the only speed trials that were held on the road during the year, the sad accident that terminated them preventing any further attempts for road records. Although these trials were interrupted and not completed, the Baker electric vehicle that ran amuck made the record of 36 1-5 seconds for a kilometre, while S. T. Davis made a record for a steam carriage of 1:12 for the mile and a record of 46 1-5 seconds for the kilometre.

Through August, September and October new world's track records were repeatedly made by various classes of motor cars, and, although the straightaway figures for the mile and kilometre do belong to France practically all others were made in the United States. The mile in 1:02, made by Alex Winton, and the unaccepted record of a mile in 1:01 1-5, made by Oldfield, warrant the belief that either of these men might be dangerous to the French road records if they could but try for them.

The finest showing for the American made automobile came in October, when sixty-eight of the seventy-five cars that started on the reliability run from New York to Boston and return completed the trip, of which number sixty-five earned first class certificates and seventeen scored a clean bill of health and were equal claimants for the Shattuck Cup.

All of this is history that warrants an increased confidence in the home product, and justifies a reaching out after greater things. The American machine is ready for severer tests on the road and on the track than it has had. Very soon it will have one in competition with the best products of the world. Until the cars that will compete for the Bennett Cup are made known it is impossible to form any opinion on what will be their chances to make a creditable showing or possibly to win.

Variety is truly the spice of life, and no one knows it better than the autoist. To have too much freedom from accident—or incident, which is frequently the same thing—is only a degree less exasperating than to enjoy (?) too much trouble. What is really wanted is the happy medium—enough incident to give spice to existence, enough successful effort at putting wrongs to rights, to leaven the monotony of life. And, it may be added, the autoist usually gets this fillip.

No repairs or adjustments, except while running, is to be one of the requirements of the 1903 British trials. That is to say, all time spent on the cars will be deducted from the running time. The rule is severe but fair, for the car that somes through without repairs is undoubtedly entitled to more credit than one that has to be tinkered with. Such a rule brings this fact out.

Reports of mysterious cars being built in secret to compete in the Bennett Cup race, one being fathered by H. S. Harkness and another of anonymous origin, smack strongly of America Cup preparatory methods. The yachtsmen of the land appear to like the ways of the devotees of Neptune.

An English autoist was arrested and fined recently for driving his car at the rate of ninety-seven miles an hour. The A. C. of G. B. should see that he is put on the Bennett Cup team.

Some owners have such bad luck that not only automobiling, but life itself, seems like one grand confidence game to them.

Snow several feet deep is not sufficient to feaze a well behaved car.

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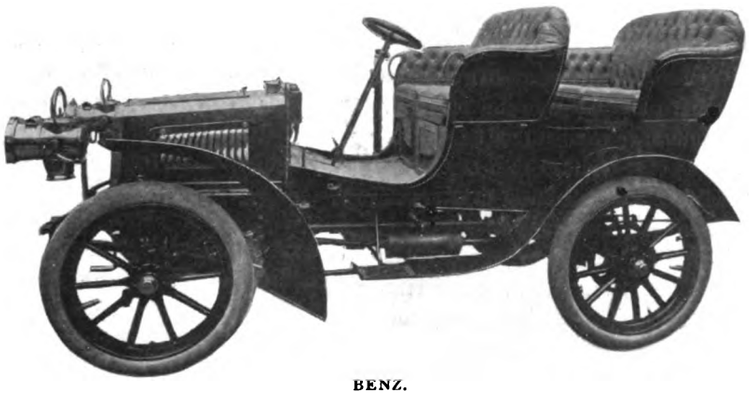
Though Patriotic Frenchmen Fume, the Pari

The Mercedes Car Sets the Fashion for 1903
Valves and Improvement in Carburretters ha
Steel Frames, Steel Cylinders, Mechanica
Favor—Mors Alter Engine, C. G. & V. s
Change Speeds, and Panhard and Dec

French Bureau Motor World.
2 Rue d'Abbeville.

Paris, Dec. 15.—As the automobile industry is accurately reflected in the annual show organized by the Automobile Club of France so the growing importance of the motor vehicle is to be judged by the increasing number of carriages exhibited, the larger space devoted to the display of vehicles, and the remarkable interest taken by the public in this annual exposition.

At each of the previous shows the industry seemed to have about reached high water mark so far as it proved the popular success of the automobile, but on the present occasion, at least, all previous manifestations of the kind have been eclipsed, and in the light of past experience it is by no means certain that the Paris shows have even yet arrived at the limit of their success as one of the great spectacular events of the year. Nothing, indeed, is more remarkable than the way in which the automobile has taken a hold upon the affections of the French public. It is easy to understand that they should be attracted to shows and expositions of all kinds which appeal in their artistic sentiment, and offer something which pleases their taste and are looked upon as a convenient rendezvous of the pleasure seeking classes, but with all due respect to the automobile it is difficult to associate it in any way with the highest forms of art, though as we shall show art has taken a pretty big place in the Salon de l'Automobile, and if the public flock to the Grand Palais in their thousands it is solely because they take an interest in the vehicles themselves. The Frenchman is, in fact, proud of the standing which the motor vehicle occupies in his country. He regards himself as the inventor of the automobile, and having originated and developed mechanical road locomotion, he believes it to be the duty of France to keep well to the fore and maintain the supremacy which nevertheless it does not seem in danger at the moment of losing. The construction of motor cars is the one branch of the engineering trades which is really flourishing in France, and it is a patriotic duty to support the industry and show the world that this country is successfully tackling the various problems which are to change the whole aspect of road locomotion.



BENZ.

The number of exhibitors is far more considerable than was the case last year, and the organizing committee have had the greatest difficulty in finding room for them all. Every available inch of space has been taken up in the main hall, a vast glass covered building upward of two hundred yards in length, and all around the two circular galleries the exhibitors are cramped for space, and they fill up the annexes with stands of motor cycles, tires and accessories, and down in the basement there is a big exhibit of alcohol motors, and alcohol as a heating and lighting agent has also taken possession of the rear hall. Contrary to the usual experience with shows of this kind, the appearance of the main hall is extremely picturesque with the great variety of artistic signs, for the committee have wisely decided to encourage the artistic taste of exhibitors by offering special prizes for the best arranged stands, with the result that the artist and decorator have done marvels in the way of providing beautiful settings for the automobiles. Clement, for instance, has a sign painted in relief representing various automobile scenes, and De Dion et Bouton have called in the aid of the "new art" with graceful sculptured signs, and others have relied mainly upon the skilful arrangement of plush drapery. This feature of the show is well worth the attention of foreign makers who will find that one of the secrets of successful exhibiting is to make their stands as attractive as possible, for though the man who goes to buy vehicles may not be influenced by the way in which the cars are staged an artistic show is a very important factor in drawing the public, among whom are a large number of prospective buyers who only need convinc-



MORS 8 H. P. LIMOUSINE.

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; Show Proves Dominence of German Ideas

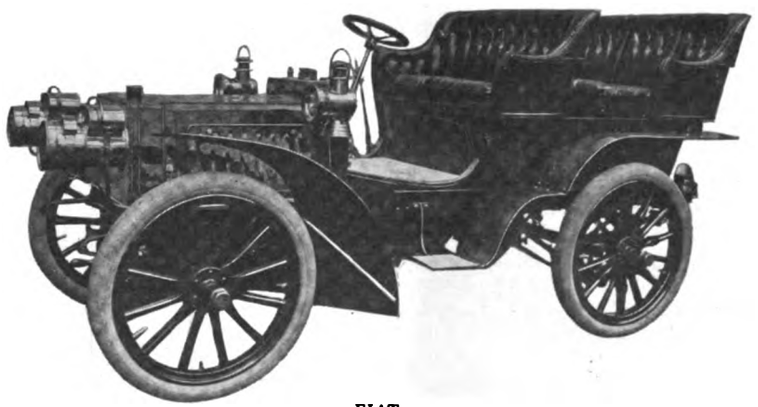
-Square Bonnets now the Style—"Mechanical e Done Wonders for the Gasolene Engine"—ly-Operated Inlets and Dynamos in High ow 8 Cylinder Motor and Dispense with uville Contribute New Developments.

ing to take a practical interest in the automobile.

Another thing that may be mentioned as proving the increasing vitality of the motor vehicle is the considerable number of cars arranged outside the Grand Palais. These made a show of themselves. Most of them belonged to private owners who were visiting the Grand Palais, and others were duplicates of the vehicles shown inside and were intended for trial purposes. Manufacturers are no longer content with merely explaining the mechanism of their cars. They are anxious for the public to try them, and the prospective buyer has now an opportunity of going direct from the stand to the car outside, instead of being required to go away somewhere out in the suburbs to the works, when he will more often than not intentionally forget all about the appointment.

Again the show was formally inaugurated Wednesday by the President of the Republic. M. Loubet has certainly visited the previous expositions, but he has never been there to inaugurate, and, in fact, none of the shows in Paris have ever been able to secure such a high distinction as to be officially inaugurated by the President. The event is therefore one of the greatest importance as showing that the Salon de l'Automobile is regarded by Paris society as something more than a social function. The French aristocracy and the wealthy classes have, in fact, built up the automobile trade, and they are proud of the part they are playing in the development of the industry.

In our preliminary article on the Show we covered most of the new features in motor vehicle construction, and, in fact, what we said then can only be repeated now as giving a general idea of the constructional improvements in the carriages exhibited. The steel frames, motors with mechanical induction valves, and carburetters we have already described, and with the combination of the mechanical valve and the new carburetter we have got a car which is as silent as the most exacting user would wish. The mechanical valve and throttled carburetter are of course copied from the Mercedes, and it is a curious fact that even in external appearance the new carriages have a close resemblance to the Mercedes pattern. Patriotic Frenchmen deplore this tendency to copy the German machine, and copied, too, with almost slavish imitation, since it seems to show that the Gauls are no longer able to rely entirely upon their own ingenuity and are taking ideas from a country which has never shone brilliantly in the automobile industry, and, apart from the Mercedes, has never produced a satisfactory pleasure carriage. The influence of the Mercedes is real and far-reaching, and is undoubtedly an excellent one except that it appears to keep the mechanical design of cars too much in one groove. Whether this influence will be permanent it is impossible to say, though it is to be feared that the French makers will be a long time breaking away from it, especially in view of the fact that the Cannstatt people are still keeping ahead, and will be producing in 1903 certain improvements which may once more put them in front of the French cars. At the same time it must not be overlooked that the Mercedes have been copied in the essential features which conduce to silent running, and having almost entirely suppressed the noise of their motors they have got to a point when they may give more attention to other parts of the mechanism, such as increasing the efficiency of the transmission gear



FIAT.



BELGICA 35 H. P. LIMOUSINE.

The French have indeed already begun to successfully tackle a problem which is almost, if not quite, of as much importance as the suppression of noise. This is the invention of the "compensating carburetter." The difficulty with motors so far has been in regulating the gas mixture, which has always had to be done by hand, and even the most skilful driver is unable to do this satisfactorily. With the new Krebs carburetter, of which we gave a description in the last show article, the proportion of gas and air is regulated by the motor itself, and an engine running in the alcohol section

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works with remarkable regularity and with scarcely any noise at all. By using the ordinary types of carburetters the quality of the mixture is constantly varying with the difference in the running of the engine, and as the motor slows down the proportion of air increases, with the result that the gas becomes so poor that the motor stops. With the compensating carburetter the mixture is always the same, so that the impact on the pistons is the same, and some makers employ carburetters in which the richness of the gas is increased with the slowing down of the engine, though whether there is any advantage in using a mixture with a higher proportion of gasolene is open to question. The improvements in carburetters and the mechanical valves are thus tending toward the design of motors of greater elasticity, and this is one of the features of the Paris Show.

In dealing with the stands we will describe first of all the novel features on the well known types of cars. The Mors people have entirely changed the design of their engines, which are now cast with the valve chambers on each side, and the inlet valves are operated mechanically by means of half time shafts driven from the engine shaft with fibre spur wheels. They are still employing the magneto, but are adopting a new mechanical device for advancing and retarding ignition. The system of radiator has also been changed, and the one adopted is on the Mercedes principle, with small elongated cells forming thin walls of water, and an air circulation is induced by a fan behind. The lubricating oil is fed under pressure of the warm water from the motor before it returns to the tank, this system being used to prevent the oil from getting thick in cold weather. The employment of the radiator tank has also changed the appearance of the motor bonnet, which is now long and straight, as is the case on nearly all the cars employing this type of radiator. The crank chamber is carried on arms which are bolted to the main members of the steel frame, which is of the section introduced by the Mercedes and now being very largely adopted by the French makers. While it may be doubted whether there is really any advantage over the armoured wood frame from the point of view of lightness and strength, unless the metal used is of special selection, the construction of the steel frame is certainly cheaper, and makers evidently believe in the superiority of the steel frame, since they are building it to a greater length and in this way are allowing it to be fitted with larger and more roomy carriage bodies.

In the carriages of Charron, Girardot et Voigt we again see the steel frame of the usual section, with the motor bolted to the side members. As the result of their experience with the racing cars which were fitted with steel cylinder engines, the firm intend in the coming year to build all their motors with steel cylinders, and the cast motor will be abandoned altogether. And here we must rectify a statement we have made in previous letters to the effect that the steel cylinder motor is more expensive to produce. According to certain makers this is not the case, and if some steel cylinders are more expensive it can only be in the cost of the material employed, as some manufacturers give more homogeneity to the metal by submitting it to a hammering process or to hydraulic pressure. The sole advantages claimed for the steel cylinder are lightness and the absence of blowholes. The new C. G. V. engines have mechanically operated inlet valves, the valves being on each side of the cylinders, and every part of the engine can be got at independently. The firm have their usual transmission gear, modified to give direct drive on the top speed, as is now usual in most of the vehicles. Besides their standard types of two and four cylinder motors the C. G. V. concern exhibit a frame with an incomplete eight cylinder engine of forty horse power, with the cranks set at 45 degrees. This is an entirely new departure in automobile construction, and it is intended to do away with the change speed gearing altogether, since the makers claim that with the facility for running at any speed from 200 revolutions up to 1,600 the eight cylinder engine will allow of the car being driven at any rate without the intervention of gearing of any kind, the speed of course being varied by simply advancing and retarding ignition. As the new vehicle has not yet been terminated, the claims of the makers can hardly be accepted without reservation until the car has been put to the test. The firm also exhibit a new war automobile in the shape of an ordinary tonneau armored with steel plate and carrying a Hotchkiss gun. This is not the type of vehicle required for war purposes, as the motor and tanks and every vital part need quite as much protection as the man behind the gun, who, however, gets very little. With the concentrated fire employed in Continental tactics an automobile would have little chance within range unless it were armored all over.

The features of the C. G. V. cars are to be met with on most of the other vehicles at the show, with the exception of the steel cylinders, which are still confined to a few firms. Whether the steel cylinder will become general it is difficult yet to say, for the French manufacturers are not usually ready to jump upon a new idea unless it is a proved success, and it is by no means certain that the steel motor has any advantage beyond lightness and freedom from blowholes. The C. G. V. firm are the only people who have decided on building all their engines upon this system, the other makers preferring to leave the steel cylinders for the big engines of 50 and 60 horse-power and employ castings for smaller motors.

As we have said, the similarity of design observable in the vehicles is largely due to the influence of the Mercedes, and even the firms who have always taken the lead with new improvements are adopting the features of the German vehicle. On the Mors stand, for instance, we see the U section frame pressed out of steel plate, and the engines have mechanically operated inlet valves. The only change in this vehicle from the usual practice is the method of advancing and retarding ignition with the magneto, which is done by a special form of cam, and the carburetter has also been modified so as to secure a constant quality of gas mixture, a condition which is very necessary in engines designed to run at a very low speed. The usual method is to govern the carburetter by the engine so that the air ports are opened or closed by the action of the governor, but in the Mors the gas is always kept in proper proportion in the mixing chamber, and the quantity only is varied by ports over the induction valve. Of course, the quality of the mixture can be regulated by hand, if required. There is no change in the type of transmission which was adopted for the first time on the Paris-Vienna vehicles, and is now used on all the firm's vehicles. The outward appearance of the Mors cars has been entirely modified by the use of the tank radiator, which fits in the end of the motor bonnet, so that it is not rounded off, as formerly, but is straight, with the top forming half of an octagonal section. This gives a much neater look to the vehicles, and, in fact, the radiator tank has done much to improve the appearance of the automobile all around.

In the way of novelty it cannot be said that the show has anything particularly striking, for when makers begin to copy standard systems they do not find much scope for the display of their own ingenuity, and, moreover, the failure of so many new



NAPIER.

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and ingenious systems in the past has made inventors chary about bringing out new mechanisms unless they are designed upon thorough mechanical principles. The "crank" is beginning to lose ground in the annual shows, and as the automobile passes the experimental stage, and manufacturers see that they have everything to gain in following the best practice, they are not inclined to trouble themselves with any startling innovations, which, however ingenious they may be, are not likely to have much success in a road vehicle which calls for the greatest possible simplicity and the suppression of everything that may result in unnecessary loss of power between the engine and the driving wheels.

Still, on many of the stands there are a good many interesting new devices, and some of these are to be found in the Decauville cars, the mechanism of which has undergone a complete change the last few months. Like all the other leading firms, the steel frame carries a four-cylinder vertical engine, with mechanically operated inlet valves, and a special feature is the casting of the crank chamber and gear case in one piece, the two being connected by a sort of well for the fly wheel. An advantage of this arrangement is in getting a perfect alignment of all the bearings. Another point in the Decauville cars is the method of applying the power to the rear wheels. The universal jointed shaft is employed, but instead of motion being given to the rear axle, it is carried through the tubular axle to the hubs of the wheels. The axle is formed of two tubes forming extensions of the differentiad box, and inside run two shafts, each having a square end to fit into the differential, and the other end has projections fitting into the outside of the hub, over which is screwed a cap to keep the shaft in position. This is an entirely new method of power transmission and it will be interesting to see how it works. The idea, of course, is to take any thrust off the axle, which, in the case of shaft transmissions, is very considerable.

Panhard et Levassor have evidently not thought it desirable to follow the general practice of building their frames with steel, for they are still using armored wood and the transmission gear has not undergone any change, but there are several interesting improvements in the motors. They are exhibiting two types of engines, a four cylinder vertical engine of 60 horse power and a three-cylinder motor of 8 horse power, the latter being of a type introduced by several makers who aim at getting over the noisy action of the two-cylinder motor by setting the cranks at 120°. Any one who has used a four-cylinder motor will never return to the two cylinder, and by effecting a compromise it looks as if makers were getting the same sweetness of running with the three-cylinder engine. It is probable that the system will become very popular in the future for light carriages. On these smaller engines the induction valves are automatic, but the results obtained with the Krebs carburetter in the way of slowing down are startling. In the alcohol section there is a big four-cylinder with automatic valves, coupled to a dynamo, and it is slowed down to 200 revolutions with the greatest facility, while even when running at high speed the noise is extremely small. The carburetter is doing something wonderful in the way of improving the gasoline motor, and what with the mechanical valves and carburretter a big advance is being made in the production of motors giving a high elasticity of power. On this car another feature is the steering wheel control, consisting of a cross piece fitted to the wheel and forming three parts, so that the throttling and ignition are controlled by pulling away one or another of the tubes from the central toothed ring, and on turning them as required, letting them slip back to be fixed by the teeth. On the big car the four-cylinder engine with steel cylinders is carried on a couple of steel bars passing through the crank chamber and fixed to the side members of the frame. The accumulators are charged by a small dynamo from the fly wheel, as is the case in the Decauville and other types of vehicles. The radiator tank is also employed, with rectangular air chambers on the Mercedes pattern. The firm exhibit some very fine finished cars in the form of the coach, limousine and French cab.

The Georges Richard vehicles have been entirely remodeled since the last show. This firm formerly made a feature of voiturettes, in which they used small air cooled engines and belt transmissions, but when the business came under the management of Brasier, the late engineer of Mors, the whole mechanism was changed and the firm have been giving their attention specially to big cars. These are propelled by four and two-cylinder motors, the larger ones developing 40 horse power. The makers have very closely followed the Mors pattern of transmission gear with direct drive on the top speed, though in certain respects it has been simplified. Clement et Cie make an excellent display of light carriages with motors of one, two and four cylinders, and they are designed with either automatic or mechanical inlet valves, the valves in the latter case being on the same side and operated by the cam shaft. The carburetter is regulated by the governor. It has magneto ignition, which, by the way, is very prominent at the show, and this system seems likely to very largely replace the battery in the future. There are several new features in the Clement cars, notably the expanding clutch forming sectors which are expanded inside the female cone, which has the advantage of preventing any slipping action of the clutch and at the same time allows of its being applied progressively. The expanding clutch is to be seen on the C. G. V., the Pascal, Berliet and several other vehicles.

An international flavor is given to the show by the presence of a number of cars of foreign origin. From England comes the Napier and Wolseley; from Germany the reconstructed Benz and the Mercedes—the latter being confined to 1902 patterns shown by a local agent; Belgium sends the Belgica; Italy the Fiat, and America was represented by a lone steam car, which is not wholly honored in its own country.

Following their usual custom, the Serpollet Company contributes a freak racing car, "Le Torpilleur." It resembles an inverted coffin as much as anything else; it has a section scooped out of the center, into which the operator sits and directs the progress of the car. The chassis is long and low and the body overhangs the rear wheels by several feet.

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GUESSING THE GRADIENTS

Hills, Like Speed, are not Always What They Seem, as Witness These Examples.

As not one man in five can determine with any degree of accuracy the speed at which an autoist is travelling, so very few of the latter have anything but hazy ideas of the gradients of the hills they climb.

That a 30 or 40 per cent grade has been ridden is often claimed—and really believed. They do not stop to think, or to figure the matter out and see how absurd such claims really are. A 25 per cent grade—an ascent of 1 foot in 4—is about as stiff a grade as an automobile can climb, and then only if the roadbed is good. Thirty and 40 per cent grades are utterly out of the question.

Nor is it motor cars alone that would meet with failure on such excessive rises. No horse drawn vehicles could surmount them. No road builders would be so stupid as to include such gradients in their plans, knowing, as they do, that they would be entirely impracticable.

Ordinarily roads seldom reach a gradient of 20 per cent; the exceptions being in mountainous regions, and even then it is doubtful if 30 per cent is ever exceeded for more than a few feet. The notorious Nelson Hill, near Peekskill, N. Y, did not reach 20 per cent at its steepest point, yet for miles around it was looked upon as a formidable "pimple," and one likely to cause many automobiles to come to grief—as it did in the 1901 endurance run. Since then, so excessive was the grade considered, a new road has been built around it.

On the Boston run last October the steepest hill encountered in either direction did not reach 20 per cent. Eagle Rock hill in the Oranges does not reach this figure, either. It would probably be difficult to find a hill, unless in remote districts, that is as steep as 30 per cent.

It will be found, too, that ordinary grades, such as the autoist encounters on the average road, seldom exceed 10 or 12 per cent. A grade of half this much would sometimes be accounted "a pretty good hill."

Baltimore Park Officials Defy Law.

Baltimore autoists and park commissioners are at loggerheads again. In defiance of the State law, which was passed with this very matter in mind, the commissioners have a rule which forbids the use of Druid Hill Park to automobilists. The rule bars heavy vehicles and others not drawn by horses.

A short time ago William Keyser, jr., president of the Automobile Club of Baltimore, invaded the sacred precincts for the purpose of making a test case, and was promptly arrested. The magistrate before whom he was brought as promptly discharged him, citing the act of the legislature.

Asked for an expression of opinion, President Clendinen of the Park Board, who is one of the most prominent of the autophobes, said:

"I am very much occupied with my private business, and I have no statement to make concerning the matter."

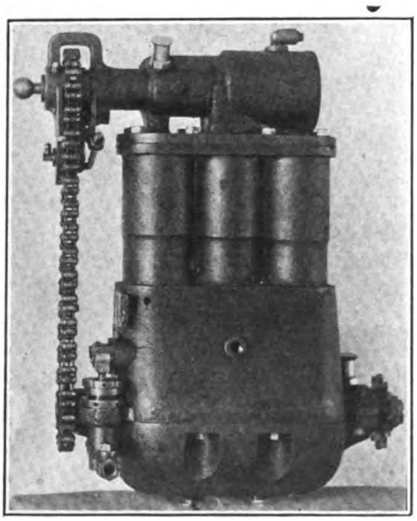
Carter's Runabout.

A good looking steam runabout is that made by the Carter Automobile Company, Jackson, Mich., and shown herewith. The vehicle is equipped with a three cylinder engine possessing some novel features. A rotary valve constructed on the same pdinci-



ple as the slide valve is used, which will keep seated at all times; wear will not affect the valve in any degree. There are no stuffing boxes.

The body is hung very low, a construction made possible by the fact that the shaft runs through the engine with driving sprocket on the side instead of through the centre. By so placing it the chain



passes alongside the boiler instead of under the firebox.

The carriage has a low water alarm as well as a gauge glass and try cocks, a steam air pump and a 11-16 inch bore to boiler. The feed pump has two six gallon tanks of gasolene, with separate cut outs, which sets under front hood, or seat.

COLD WEATHER CARE

Small Attentions That Will Save Large Repair Bills and Much Vexation.

One would think that any autoist who had the slightest regard for the value of his car would take some simple precautions to render sudden cold snaps harmless. To put a car away for a night, or nights, in a place but little sheltered, without drawing the water from the tanks, the pipes and the water jacket is to invite an accident. A drop in the temperature is all that is necessary to precipitate it.

The winter has scarcely well set in, yet there have been a number of cases reported in which cracked cylinders and burst pipes figure. The cars to which they belonged had been left open to the attack of the frost king just once too often; and the penalty had been paid.

With water jacketed engines the best plan is, of course, to use a non-freezing substance. If this is not done not even the most assiduous care and attention will avail to keep off Nemesis in the shape of a congealment of the liquid that is almost certain to bring havoc in its train. Circulation may be relied on to prevent this to a certain extent; but if a stop of any length is made freezing is likely to occur, while in extremely low temperatures this may take place even while the car is running.

Many owners prefer, of course, to go through the winter without using a non-freezing mixture, arguing that for the limited use they make of a car it is not worth going to the bother and expense.

On the comparatively few occasions when the car is levied on a very little attention given to the drawing off of the water will prevent any trouble of the kind apprehended. But pains must be taken to see that the draining of the pipes, tanks, etc., is done thoroughly, for a few drops of water left behind will do almost as much damage as a large quantity. A burst is a burst, and it will sometimes cost just as much to repair the ravages of one caused by imperfect draining of the water receptacles as one due to the neglect to take any precautions whatever.

As long as a car is kept in commission through the winter it ought to be looked after properly; and there can be but one way of thinking about the matter of freezing, i. e., that an ounce of prevention is worth a pound of cure.

Olds Helps the Postmaster.

To relieve the congestion caused by the accumulation of Christmas mail at Detroit the Olds Motor Works placed three automobiles at the disposal of the postmaster, and they were put to good service in making deliveries.

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PHILADELPHIA'S REQUIREMENTS

The Quakers Reduce Speed and Define What Manner of Car Shall be Used on Their Streets.

By accepting the amendments proposed by the Common Council the Philadelphia Select Council last week advanced the vehicle traffic ordinance calling for a maximum speed of seven miles an hour one more stage. It now requires only the Mayor's signature to become a law, and that is confidently expected.

The ordinance passed provided that "no person, driver or operator in charge of any automobile or motor vehicle, or carriage described as above, shall drive, operate, move or permit the same to be driven, operated or moved on, over and upon any public street, alley, highway, road or driveway in the built up portion of the city of Philadelphia at a rate of speed greater than seven (7) miles per hour, and within all other parts of the city of Philadelphia at a rate of speed greater than eight (8) miles per hour."

In the original measure the rate of speed beyond Vine, South and Sixteenth streets was eight miles, and beyond Erie avenue, Porter and Fifty-second street, first a speed of fifteen, then of ten miles, was permitted.

In addition to the regulation regarding speed, the ordinance contains many provisions calculated to render the lot of an automobilist an unhappy one. The Bureau of Boiler Inspection is given control of automobiles, and to it they must be submitted for examination. Licenses and numbers will be issued by this bureau upon the payment of the required fees.

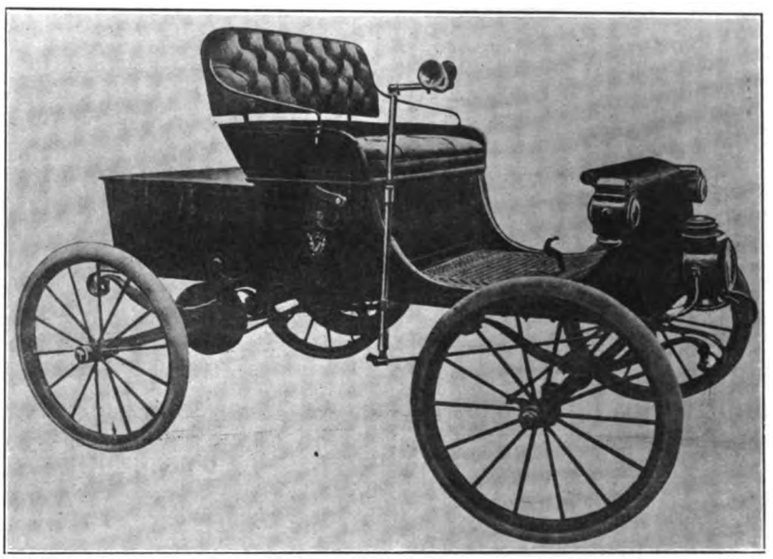
Before being passed by the bureau these stipulations must be fulfilled by the various vehicles:

The reservoirs, tubes and whatever parts employed for the holding of explosive or inflammable products shall be so constructed as not to allow the escape or falling out of any material which could cause an explosion or a fire. The steering gear shall be so grouped that the driver can manipulate the same while watching his route. There shall be nothing in front of the driver to obstruct his view, and the indicating apparatus shall be placed where he can easily see it. The vehicle shall be so arranged as to respond readily to the steering gear and to take sharp curves easily. Every part of the steering gear shall be solidly and safely constructed. Automobiles whose dead weight shall exceed 500 pounds shall be furnished with machinery for backward motion.

They shall be provided with a good and sufficient brake, which brake, or a separate or special arrengement, shall make it possible to check any forward or backward motion, and suitable bell, horn or other audible signal, which shall be rung or blown by the operator only to warn other vehicles and travellers upon the highways of his approach or whenever there is danger of collision or accident. They shall also be provided with all other appliances and apparatus, such as sufficient condensers to prevent the unnecessary escape of steam or vapor, and improved muffiers, etc., to stop any unnecessary noise in the operation or management of said vehicle upon the highways.

Improvements in the Spaulding.

The 1902 Spaulding runabout, manufactured by the Spaulding Automobile and Motor Co., of Buffalo, N. Y., is here shown for the first time. In common with the general tendency, it has longer wheel base, more powerful motor and has also a new style of body that gives it a very substantial, attractive appearance.



It is not expected that many will be seen in this country, the bulk of them going abroad, the company having taken a contract that will absorb nearly, if not quite, all of this type they are able to produce.

They will, however, show a new 25 h. p. tonneau touring car at the show that, rumor has it, is likely to be somewhat of a revelation in construction and price. The company are on the eve of important changes, due to the accession of new capital and men, all of which will be anounced in due time.

Where the Credit is Due.

Through a slip of the memory it was made to appear in the Motor World last week that the Electric Vehicle Co. had but recently begun to produce wheel steering electric broughams. As a matter of fact, this concern was by many months the first one to produce such a vehicle, having turned one out as long ago as January, 1902.

ALAS! SAYS LETTS OF LONDON

He Sells American Cars, but Doncher Know, he Avers, They Have no Chance for the Cup.

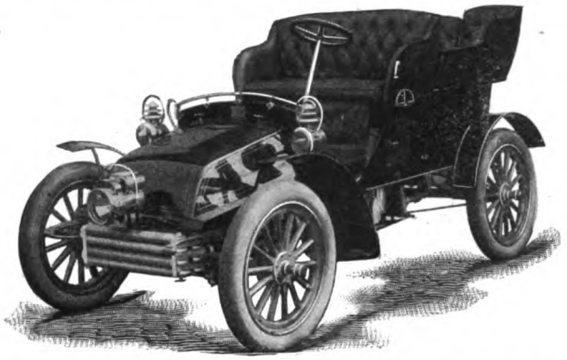
A story calculated to fill the hearts of American makers with awe is brought here about the wonderful prowess of the Napier machines that will compete for the cup. W. M. Letts, the Locomobile man of London, is the courier. He said: "So you folks over here think you will go over and lift the cup?" Then he smiled as if the idea was intensely amusing, and continued: "My, but you have no chance. The new Napiers that are being turned out are wonders, simply marvels. Well, when I tell you they have a machine now good for eighty miles an hour, steady going, you can guess that it will be hard to beat. And Edge always has something up his sleeve, too."

In the course of further talk Mr. Letts, with the unqualified confidence of a loyal Englishman, expressed confidence that the Napier machine would again win the cup against all comers. He does not think that the new course in Ireland now being considered will do, although it is ninety-four miles long, but expects to see the race held in France, and he commented that the Americans would have less chance there than they would if the race was run in Great Britain. One reason given by Mr. Letts for his confidence that a Napier will win is that S. F. Edge will drive one of the two entered and Jarrott the other, and Jarrott, says Mr. Letts, is the greatest automobile operator on the face of the earth to-day.

The house committee of the Automobile Club of America has made arrangements to keep "open house" to-day, New Year's, and refreshments will be served to members and their friends.

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The "YALE" CAR



New to the trade, but thoroughly tested.

MANUFACTURED

by an established concern with a reputation to sustain

EXHIBITS AT NEW YORK AND CHICAGO.

THE KIRK MANUFACTURING CO.,

TOLEDO, OHIO.



MADE FOR THOSE WHO WANT THE BEST.

The corrugated tread G. & J. Tire is detachable, double tube, and can always be permanently repaired.

It is made from the best materials, is easiest riding and longest wearing. The best automobile tire is the cheapest.

G & J TIRE CO.

INDIANAPOLIS, IND.

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Commentary

Talk about hitting the nail on the head! Why, judging from the indorsements I have received of my last week's protest against the Mismanaged Mutual Admiration Association, that kick of mine must have banged a kegful of nails and landed on the head of each particular plank fastener therein. Most of my correspondents seem to think I did not make my protest sufficiently strong, and they forthwith proceeded to supply me with ample proofs of more foolish actions on the part of the N. A. A. M. that even I had never known of. I cannot, however, allow myself to be made the medium of publicity for the many grievances which my correspondence shows me exists against the existing mismanagement of the National Association of Automobile Manufacturers. As I said last week in this matter, I hold no brief for any one, nor will I. The injury this alleged representation of successful automobile manufacturers has caused the trade and the pastime is so manifest to any one who will for a moment look into the matter that it would be a sheer waste of time and space to make use of any of the proofs thereof which my indorsers have so kindly and so plentifully placed at my disposal. The disease has been diagnosed, the remedy for it is known and close at hand. Those who believe that the automobile trade is worthy of a representative organization, officered by men who have succeeded, not failed, in the automobile trade, have it in their power to secure such an organization and such officers whenever they will take the small amount of trouble necessary to relegate the present incompetents to the back door of prominence and the front door of a well earned and unregretted obscurity, from which unfortunate circumstances have temporarily detained them.

* * *

The way of the speed transgressor may be hard, but that of his victim is generally a little worse.

* * *

I went to a dinner recently which was given in honor of the New York-Boston reliability run, wherein first honors were based on "no stop" performances. Such is the perversity of man, however, that the memento presented to the guest of honor at the dinner, who had charge of the no stop affair, was a stop watch. This apparently incongruous gift had been chosen for the very good and sufficient reason that the official previously to the presentation had no stop watch.

* * *

It is a mighty poor rule in regard to an automobile that doesn't work at least four or five ways.

* * *

While at the banquet above referred to I was astonished to hear a prominent member of the Automobile Club of America address the diners in an impassioned appeal to organize themselves into a vigilance committee for the purpose of dealing out summary punishment to the owners of the light American type of motor vehicle. According to the speaker, who is the owner of one of the biggest and reddest foreign vehicles, and who, as he told the diners, has several times been arrested for speeding at a rate which he admitted was dangerous to the public, the latter really finds no fault with being run over or scared by an automobile, so long as it be a big imported automobile. When, however, the runner over or scarer is seated in nothing but an ordinary American made vehicle, then the public feels insulted and raises ructions. I tried to follow the gentleman's arguments in favor of his advocated lynchings of all owners of light vehicles, but I suppose my mental calibre was too small to grasp the logic of the speaker's ideas, if he had any, since it seemed to me like his plea was nothing but a very silly attempt to claim that only the owners of big and expensive automobiles had any legal or moral right upon the highways. I had previously heard that among other foreign ideas some of the members of the Automobile Club of America had sought to transplant here was the one that the automobile was something which was only for the rich, and for whose exclusive use it should by all means be kept; yet I must confess before this speech I had never heard any one unwise enough to publicly declare in favor of the idea. It takes all kinds to make a world, and I suppose because it does that this speaker has some excuse for being here, even though it is difficult to discover just what his excuse is.

* * *

As a rule, the owner of an automobile who possesses the largest stock of hard luck stories is the man who possesses the least practical knowledge of the vehicle itself.

* * *

All men are equal before the law! Of course they are, and if you have any doubts as to there being so I'll proceed to prove it to you. Two ladies entered a public conveyance and told the driver thereof to take them to a neighboring theatre. The driver—and he was licensed too, please note you who are preaching licensing as a sovereign remedy for automobile scorching—whipped up the poor beast from whose torture he lived, and at the risk of the lives of his passengers, and of every other user of the public thoroughfares, he tore through the streets and finally landed at the theatre. The ladies, almost frantic with fear, sought as quickly as possible to escape from the vehicle, whereupon the driver, licensed, please note, seized one of them by the throat, flung her upon the pavement and proceeded to amuse himself by kicking her. Along about this time a policeman strolled up and arrested the licensed driver. Next morning the gentle beast told the judge before whom he was brought that he was so drunk when he attacked his fares that he really did not know what he was doing. Whereupon the judge pityingly fined him $5! And took away his license, of course? Oh, no indeed; you see, he was a cab driver. Now, had he been a sober, respectable automobilist proceeding along an unfrequented street endangering no one, he would have been fined $50, perhaps imprisoned, and certainly deprived of his license, if he had one. Equal before the law are all men, eh? In story books may be, but elsewhere they are not.

* * *

Don't do any worrying about break downs in advance. The future never becomes really serious until it is transformed into the present.

* * *

There is a gentleman employed as a cartoonist on one of the yellow papers who when he is not cartooning dons a yellow road coat and races a trotting horse over the $5,000,000 Speedway which a generous city has provided for him and his kind. In Sunday's paper this cartooner has a scratchy drawing which I presume is a cartoon. It is entitled, "Which road will you take?" To the left of the picture is a stony hill labelled "Success." Up this hill three human things are walking. To the right of the picture is a broad, smooth road, leading downward into darkness, and this is called "Failure." Over the smooth road two equestrians, one bicyclist and three automobilists are proceeding, but not a single road wagon or any other form of horsedrawn vehicle is shown. Wonder why? Can it be possible that we can only go to failure on horseback, on a bicycle or in an automobile? Certainly that seems to be this "famous" cartoonist's idea, and yet the man who pays him what every one else thinks is a ridiculous price for his scratchy picture allegements uses an automobile upon every possible occasion. Evidently this is a case where like master is not like man.

* * *

In his annual report the Secretary of the Navy has this to say of the conclusions the navy experts have reached after extended experiments regarding the employment of oil as fuel:

"That the best results are obtained by atomization of the liquid fuel; that the oil before being fed to the burners should be heated; that the air requisite for combustion should also be heated before entering the furnace, in order to assist the gasification of the oil product; that either air or steam may be used for atomizing purposes, but that thermal efficiency is not increased by the use of steam; that the efficiency of an oil fuel plant is more dependent upon the general character of the installation of the auxiliaries and fittings than upon the form of the burner."

It is as sure as anything in the future can be that the automobile of to-morrow is going to look to the cheapest form of oil for the generation of its propulsive power, and such experiments as the ones the United States government is making in the navy will be the means of most quickly bringing about this much to be desired condition of affairs.

THE COMMENTATOR.

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Driving on Rutted Roads.

After a hard frost it is well to drive very carefully if the road is at all rutty. Especially is this the case with small tires, for a sudden twist in a rut may pull them off entirely. Big tires fare better, for they will override even the deep ruts, but the frozen edges of the ruts will frequently cut the tires and render them temporarily useless.

The Hotel Gregorian

A New Fire-proof Hotel upon

35th STREET, bet. 5th and 6th Aves.,

TO BE OPENED

NEW YEAR'S DAY,

BY

AVERILL & GREGORY,

Of THE YATES, Syracuse, N. Y.

To be the Automobile Headquartes during the show.

Automobile Exchange & Storage Company,

133 to 139 West 38th Street,

NEW YORK.

UNDER ENTIRE NEW MANAGEMENT.

Now making extensive alterations and improvements.

LOOK FOR SPECIAL ANNOUNCEMENTS AFTER NEW YORK SHOW.

LOCKE REGULATOR CO.

Manufacturers of the famous

LOCKE WATER LEVEL REGULATOR,

Engines, Boilers, Burners, Klinger Gauges, Etc., Etc.

Send for Catalogue "C" (1903 Edition.)

LOCKE REGULATOR CO., Salem, Mass., U.S.A.

Alterations in the Exchange.

Another change has come over the spirit of affairs at the Automobile Exchange and Storage Company, at 133 West Thirty-eighth street, and this time it is one that seems to promise prosperity. The present officers of the company newly elected are: John H. Robinson, President and Manager; Rodney K. Haines, Secretary; Robert Sproul, Treasurer. Manager Robinson has some enterprising ideas, and has under way a number of alterations that will result in decided improvements. The second floor is being extended so as to cover the hatchway space next to the west door, and a stairway has been built from the main floor up to the front part of the upper story, where there will be a show room for light vehicles, while the rear will be partitioned off for a shop. A waiting room for women and one for men are being installed and the office room curtailed. President Robinson says he expects to take on the agency for several lines of American cars, and also two or three lines of foreign make. The concern has engaged M. Jarridge to look after the business in imported cars.

To Organize in New Orleans.

Autoists of New Orleans, La., have called a meeting for the purpose of organizing a club. There are about thirty cars in the city. The objects of the proposed club are thus set forth in the call:

"To furnish a means of recording the experience of members and others using motor vehicles or automobiles; to promote original investigation in the mechanical development of motor carriages by members and others; to arrange for pleasure runs and to encourage road contests of all kinds among owners of automobiles; to co-operate in securing rational legislation and rules governing and regulating the use of automobiles in city and country; to maintain the rights and privileges of all forms of self-propelled pleasure vehicles whenever and wherever such rights and privileges are menaced; to encourage the construction of good roads and the improvement of the public highways, and generally to maintain a social club devoted to the sport of automobilism and protection."

Winton Will Protest.

It is understood that Alex. Winton is very positive in the opinion that the Race Committee of the Automobile Club should not select any individual with a car that is his first product to go abroad as a competitor for the Bennett cup. So earnest is he in the matter that Mr. Winton proposes to ask permission to appear before the Race Committee and present an argument to show that only established manufacturers should be recognized by the committee in making its selection of entrants, in case the committee makes its choice without trial races, as it is now deemed likely that it may.

The stand taken by Mr. Winton is right in line with the argument presented editorially in the Motor World last week.

Recent Incorporations.

Camden, N. J.—The Reserve Automobile Co., with $50,000 capital; to manufacture all kinds of automobiles. Corporators—Henry J. Kingsbury, John A. MacPeak and James F. Cotter.

New York, N. Y.—Westchester Automobile Co., with $15,000 capital. Directors—Sanford Robinson and L. E. Holden, of New York City, and Thomas Holden, jr., of White Plains.

Newark, N. J.—The Motor Car Co. of New Jersey, with $50,000 capital. Corporators—Inglis M. Uppercu, Richard T. Newton and C. V. Childs.

Exports Still Expanding.

The exportation of American automobiles continues to show gradual and encouraging expansion. The returns for November disclose shipments to the value of $55,473, as against $39,383 in November of last year. For the eleven months ending with November the exports were valued at $1,026,083, as compared with but $301,920 during the corresponding period of 1901:

Seeking a Site.

Sag Harbor, L. I., was visite last week by E. Griswold, who said he represented the Townsend Automobile and Piano Works, which was looking for a suitable site for a factory.

HERE IT IS!

The Hoffman Single Cylinder 4 Horse Power Motor. : : : :



PRICE, $100.00.

H. L. HOFFMAN MOTOR CO.,

30 West Randolph St., CHICAGO, ILL.

STEARNS CARS.

Everybody is Talking About Them!

WRITE FOR DETAILED INFORMATION, AND INSPECT THEM AT NEW YORK AND CHICAGO SHOWS.

THE F. B. STEARNS CO.,

CLEVELAND, O., U. S. A.

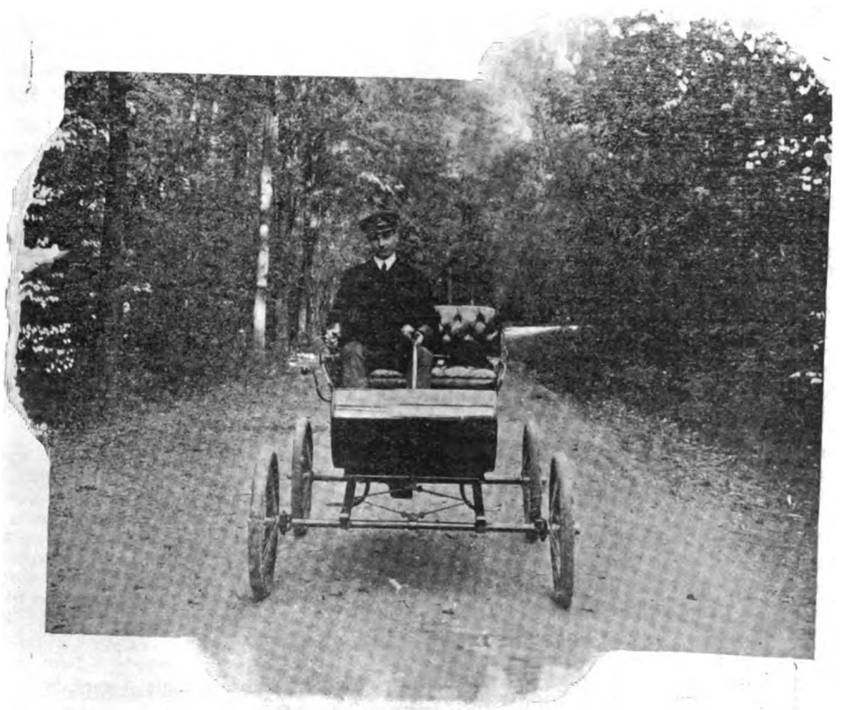
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TRIALS OF THE TESTER

The Ignominy to Which he is Subjected by his Unsympathetic Townsmen.

"That a 'prophet is never without honor save in his own country,' is often true of an automobile maker, that is if you substitute town for country." remarked a man who should know to the Motor World representative. "At least that has been my experience.

"When we first began to turn out completed cars the testing department was, of course, called upon to pronounce them right—or, as it frequently happened, wrong—before they were shipped.



"FAR FROM THE CITY'S BUSY STREETS."

"Now, there was but one way of giving them a real test, and that was to send them out on the streets and run them. Then we could see what would happen. And, it must be admitted, we did see, oftener than was at all pleasant. Looking back at it now, it was only natural; for how could any one expect a complicated piece of machinery like an automobile to emerge perfect from the factory—like Venus from the foam flecked sea. At any rate our cars did not.

"They went wrong—persistantly, and, as it seemed to us, maliciously. And they seemed to take delight in going wrong in the most public manner possible. The most frequented places—where a huge crowd could gather in the space of a second or so and make unkind and facetious remarks, such as 'there's another—busted,' suited them best it seemed.

"When this happened the man in charge had the choice of locating the trouble then and there, or of telephoning to the factory for help. Whichever he tried he came to the conclusion that his choice was the worse of the two evils. If he worked on the car the crowd increased until it seemed as if there was a fire or a riot, and the police would politely inquire if they hadn't better ring up an ambulance, while the front row of spectators would offer suggestions gratis. If another car was sent from the factory to haul the ailing one home the agony was less drawn out, but the ignominy was, if possible, intensified.

"That is, unless the second car should develop a perverse tendency also. That did not happen often, but it did once or twice, and you can readily conceive my poignant anguish when the crowd offered to haul the two vehicles to the shop.

"But there was no help for it. We had to test the cars before sending them away, and there was no other place, except the country roads outside the town, and these, in the early stages of manufacture, were sometimes difficult to reach, so chronic were the balky habits of the cars.

"The men who tried them used to come to me and complain of the hardships they underwent. They had their lives almost 'joshed' out of them by would be facetious onlookers. The now familiar 'git a horse' had not come to the front then, but its equivalent were numerous—'ice wagon' being the most popular. Indeed, it became a synonym for our car in some quarters, the harassed testers told me.

"'Never you mind; you go ahead and attend to business without paying attention to them,' I would say. 'The work has got to be done, and the best way is to do it with as little fuss as possible. The time will come when you won't have all this trouble.'

"This prediction proved true, for it is a long lane that has no turning. But it seemed an eternity before we reached the end. By that time the car was utterly, and as it seemed irrevocably, damned in the place of its birth. Everybody knew of its trials and tribulations, and the only way it could have been made to go in that town would have been by donating it with our compliments; and I am not sure that even then there would not have been some declinations.

"Thus it happened that long after the car had a good reputation elsewhere and sold readily wherever we tried to push it, the home market was closed tightly against it. Recognizing the fact, we made no effort to push it there. We went on building and shipping away, testing as usual in the town, but with much better results.

"As these testing cars were seen running, instead of broken down as of old, and the workmen kept telling of the popularity of the car in other localities—as evidenced by repeat orders—public opinion began to veer around. People said that maybe our cars had some good points after all, and after awhile we got to the point where we could sell one here and there.

"But it was an up hill job, and even yet we have to work much harder to make a sale here than to some one outside the town."

The Springing of Cars.

The proper springing of cars is a matter of no small importance. When light, very easily sprung cars are driven with but one or two passengers on the front seat, the plunging of the car over rough roads will be found to affect the gasolene feed to the float chamber of the carburetter. The plunging will cause the float to lift and flood or drip, and shut off the feed, or vice versa, so that for a few moments the engine is starved of gas. This involuntary cutting out of the engine, when gasolene is fed by gravity, may be largely prevented by keeping the tank filled.

Lengthening the Battery's Life.

When the electrolyte or liquid in an accumulator cell falls below the level of the plates by reason of evaporation it should be filled up with a little clean, soft water, distilled if possible. Further additions of sulphuric acid are not required. The solution should never be allowed to get beyond a quarter of an inch below the top of the plates, as it may cause them to buckle. If for any purpose the acid solution is emptied from the cells they should be filled up with water to prevent the plates sulphating.

There is a probability of the Panhard people introducing a "mixed" car for 1903; that is, one driven by both gasolene and electricity on the style of the Lohner Porsche Austrian cars.

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The Week's Patents.

716,382. Steam Engine. William S. Colwell, Chicago, Ill. Filed October 29, 1901. Serial No. 80,403. (No model.)

Claim—1. The combination with a direct acting engine having a reciprocating piston, and a piston cylinder provided with valved ports for supply and exhaust; of a vacuum chamber; an attachment to the piston cylinder comprising a shell or casing having a port connected with the main exhaust port of the piston cylinder and branched to form a couple of ports which are connected with the vacuum chamber, and an intermediate port arranged for discharge into the atmosphere; a rotary three way valve arranged for alternately opening and closing the branaches of the port which connects with the main exhaust passage, and operating during each stroke of the piston to first direct the exhaust from the main exhaust passage into the atmosphere and to then cut off such exhaust and place the main exhaust passage in open communication with the vacuum chamber; and a valve actuating device applied for operating said rotary valve and comprising a crank connected with the valve, a reciprocating rod for actuating the crank, and connection arranged between the reciprocating rod and the eccentric strap of the engine and involving a vibratory lever.

716,388. Steering Mechanism for Motor Vehicles. Charles Crompton, Worcester, Mass. Original application filed September 25, 1901. Serial No. 76,548. Divided and this application filed January 29, 1902. Serial No. 91,659. (No model.)

Claim—1. In a motor vehicle, a steering shaft, steering wheels a connection extending directly from said shaft to the steering wheels, a second connection between the shaft and steering wheels, said second connection including gearing, and means to render either of said connections operative.

716,492. Engine or Motor Louis Sterne. London, England. Filed April 11, 1902. Serial No. 102,446. (No model.)

Claim—1. In an engine of the type described, the combination with the pistols of rollers and operative cam united by a guiding construction for holding the two devices in the same vertical plane, substantially as described.

716,497. Hydrocarbon Burned. Hugh L. Warner and William H. Lonsdale, Dayton, Ohio, assignors to the Dayton Motor Vehicle Co., Dayton, Ohio, a corporation of West Virginia. Filed July 25, 1901. Serial No. 69,679. (No model.)

Claim—1. In a hydrocarbon burner, a burner the base of which has a series of tubes projected therefrom, and the top plate of which has a corresponding series of openings into which said tubes project, and a washer of less diameter than said openings mounted on the upper end of each of said tubes within the openings in said top plate, whereby there is provided a series of annular gas jets surrounding said washers, substantially as specified.

716,523. Multiple Expasion Steam Engine. Jackson Deneal, Toledo, Ohio, assignor of two-fifths to Stephen Brophy, Toledo, Ohio. Filed March 9, 1901. Serial No. 50,503. (No model.)

Claim—1. In a double acting multiple expansion engine, the combination of a series of cylinders of progressively increased diameters respectively, connected together side by side in the order of their progression, with their axes in the same plane, comprising a valve cylinder, a high pressure cylinder, and one or more expansion cylinders, a pair of ports in each of the division walls between the cylinders, leading from centrally located openings in the smaller cylinder, in opposite directions, to openings in the larger cylinder, adjacent to its heads, that are exhaust ports for the smaller cylinder and inlet ports for the larger- exhaust ports in the low pressure cylinder, located centrally of its length and opening into an exhaust, a steam connection for the valve cylinder, provided with a pair of branch connections opening into opposite ends of the valve cylinder, a piston in each cylinder, adapted as a valve to close the exhaust ports of its cylinder in the middle of its stroke, and open them alternately at the end of each stroke, the pistons being connected with cranks of a common shaft, the crank for the piston of the valve vylinder being set at 90 degrees from the centres of the other cranks, which alternate at 180 degrees from each other, and a manual valve in the steam connection, adapted to progressively open or close either or both the branch connections to the valve cylinder separately or simultaneously, substantially as shown and described.

716,573. Carburetter for Explosive Engines. Carl N. Nelk, Palo Alto, Cal. Filed September 4, 1902. Serial No. 122,084. (No model.)

Claim—1. A device for vaporizing liquids comprising a casing having a closed top, a conical diapragm located between the top and bottom, means for delivering the liquid upon the apex of the diaphragm to allow it to flow downwardly and outwardly, a chamber located between the top of the diaphragm and the interior of the casing, and a discharge passage therefrom, a series of open ended tubes connecting the chamber with the space below the diaphragm, and having openings coincident with the base of the diaphragm through which oil may enter the tubes.

716,590. Joint Closer for Rubber Tire Setting Machines. Will C. State, Akron, Ohio, assignor to the Goodyear Tire & Rubber Co., Akron, Ohio. Filed May 8, 1902. Serial No. 106,413. (No model.)

Claim—1. An improved clamp for rubber tire setting machines consisting of two oppositely disposed hinged jaws having in their inner faces grooves arranged diagonally with reference to the line of the tire, substantially as shown and described.

716,610. Motor Vehicle. William O. Worth, Chicago, Ill., assignor of two-thirds to William R. Donaldson, Louisville, Ky., and Henry W. Kellogg, Battle Creek, Mich. Filed June 16, 1899. Serial No. 720,837. (No model.)

Claim—1. In a motor vehicle, the combination of a motor shaft, a pair of bevel pinions mounted thereon; a secondary shaft, a pair of bevel gears mounted on said secondary shaft both meshing with one of said pinions, and a smaller gear on saeid secondary shaft meshing with the other of said pinions; with clutch mecnanism substantially as described, whereby power is transmitted from the motor shaft to the secondard shaft through either of the large gears and the pinion meshing therewith, or through the smaller gear and pinion meshing therewith, for the purpose and substantially as described.

716,615. Explosive Engine. Benjamin F. Bain, New Brighton, Pa. Filed September 28, 1899. Serial No. 731,969. (No model.)

Claim—1. In combination with an explosive engine, a puppet valve controlling cylinder port, and slide valve controlling communication between exhaust and fuel ports and said cylinder port, and connections for positively retaining said puppet valve open during the exhaust period and the suction or recharging period, and successively opening the exhaust and fuel ports, substantially as and for the purposes set forth.

716,593. Pneumatic Tube for Tires. Chas. E. A. Erse, Ormskirk, England, assignor of one-half to James Hamilton Cobley, London, England. Filed May 16, 1902. Serial No. 107,670. (No model.)

Claim—1. An inner tube for pneumatic tires, characterized by a long length with closed ends overlapping each other, the valve being placed near one end, and the other end formed with an elastic sleeve solutioned all around the tube at one part, so as to leave the extreme end free all around inside the sleev to form a pocket for the reception of the opposite end of tube, and yet permit the outer sleeve to be drawn back so as to expose the end of the tube which was previously inside the sleeve to enable any repairs to be effected.

716,656. Electric Battery Compound. George Bastedo, Brooklyn, N. Y. Filed March 28, 1902. Serial No. 100,472. (No specimens.)

Claim—The herein described composition of matter consisting of dilute sulphuric acid fifteen pounds, nitric acid fifty drams and bisulphate of mercury one ounce, substantially as described and for the purpose set forth.

716,664. Distributing Device for Steam or Air Engines. Charles A. Brunner, Levallois Perret, France. Filed July 13, 1901. Serial No. 68,272. (No model.)

Claim—1. A steam engine having a cylinder, a reciprocating piston, a valve chamber, a valve mechanism comprising the combination of a rotary valve, co-operating parts between the valve and cylinder and a spindle for the valve, a sector head on the spindle, a frame journalled on said spindle, a weight on the frame, and a projection on the reciprocating piston to act on the frame, substantially as described.

Where he got his Accent.

"Hello, Mulcahey! Well, well! How are you?"

"Clever, old chap; quite clever. I'm jolly well glad to see you, too. And how have you been?"

"Say, Tim, chop it! Where in blazes have you been; over in London for a year? Where did you get that accent, eh?"

"No, I haven't been away, you know. Have I an accent, really?"

"Oh, drop it, Tim. What are you doing?"

"I am demonstrator in an automobile establishment."

"O-o-o! I understand."

Their Ideas of Speed.

There's more truth than fiction in this summarization by the Smart Set of automobile speeds as viewed by interested persons:

	Miles.
Chauffeur's private opinion	12
Chauffeur's opinion for his friends	20
Policeman's private opinion	14
Policeman's opinion for the judge	28
Old lady's opinion who was knocked down	50
Actual speed	8

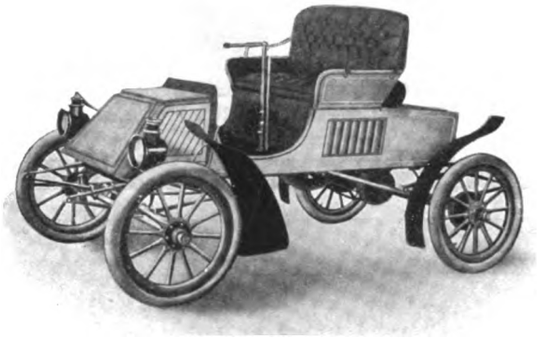
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WHERE'S THIS WONDER?

Specifications of a Mysterious American Cup Candidate That Come Via London.

'Round Robin Hood's barn—that is, by way of London, comes an account of an anonymous racing car that is being built on this side to take part in the Gordon Bennett Cup race. Premising its story with the remark that "the promises made in the name of this prodigy are entitled to respect on account of the standing of its sponsors" Motoring Illustrated goes on to say:

"The project of the constructor is to build a vehicle which shall, by a mere alteration of gear ratio, serve equally well for a 'terrific racer' or for a comfortable, high class touring car. Up to the present, he considers, cars have been built to possess a certain time or mileage, having accomplished which they require to 'go into shop' for repairs. 'The car we are building, and those to be patterned after it,' he says, 'should run 25,-



000 miles withotu needing more than ordinary attention. The following are some of its chief features.

" 'The motor is composed of 103 pieces, far fewer than found in other four cylinder petrol motors used in automobiles.

" 'Intake as well as exhaust valves are opened and closed by positive mechanical action.

" 'The composition of the explosive is invariable; the compression variable. With sharp throttling the mixture at the end of the compression stroke indicates little above atmospheric tension.

" 'The petrol and air feed mechanism is on distinctly new lines, but resembles that of the Mercedes Simplex engine somewhat.

" 'The drive on the high speed gear is direct by longitudinal bevel gear shaft to bevel gear on live axle with differential gear. The shaft and bevel gears are after the Renault type.

" 'The rear axle is trussed, but is relieved of all bending stresses by supporting its quota of the weight of the vehicle practically in the planes of the wheels.

" 'The front wheels are internally pivoted, but the construction differs from that used in European cars embodying this feature.

" 'All severe stresses arising from rough and speedy travelling have been localized with extreme care.

" 'Wide bearings, large wearing surfaces, broad faced gears are the rule throughout.

" 'Experiments show a fuel economy at the lowest throttling equal to that registered at full speed and power. The motor is of 50 indicated horsepower, but is capable of developing 75.

" 'Throttled low, each of the four cylinders give less than one to two horsepower, showing the enormous range obtainable by perfect throttling.' "

The Rambler of 1903.

In the 1903 model of the Rambler touring car, Model E, is presented a vehicle in which are embodied all the excellencies by which this make has commanded ready sale in the past, together with a few improvements of interesting character. To begin with, an addition of two horsepower has been gained by increasing the dimensions of the cylinder one inch each in bore and stroke. The next most important change is the adoption of artillery wheels instead of wire wheels, but the new ones have the Rambler stamp in the width of the bearings. The hubs are of steel, and have more space between the ball cups than other wheels of similar size. The wheel base has been lengthened six inches the the body brought two inches lower. The differential has been radically changed; the whole case and sprocket is now made in one piece, and an end thrust bearing provided for the rear axle so as to avoid end play. A new carburetter with float feed has been introduced, of which great things are expected. The cooling system has been enlarged so that there are now nearly 400 radiating tubes instead of 200. The axles are heavier, and the front one has been reinforced throughout its entire length. There is a solid panel seat back to the new car, and complete mud guards are furnished as a regular equipment without extra charge. While the body is of the same general type, the lines have been softened and the rather blunt appearance of the front bonnet has been overcome. The tires used will be three inches in diameter instead of two and one-half inches, as were used last year, and the gasolene tank has been enlarged so that it now has a capacity for 150 miles.

Three hundred of the 1903 Rambler cars have been contracted for by John Wanamaker, who has taken the New York agency, and R. A. Greene, who has charge of the automobile department, expresses serene confidence that they will all be sold.

ON RURAL ROUTES

Results of a Month's Test Demonstrate Motor Car's Advantages for Mail Delivery.

After a series of exhaustive tests over a number of rural mail delivery routes in Lenawee County, Mich., the automobile is pronounced a success by the postmaster having charge of the tests, and he is likely to send a strong recommendation to Washington concerning them.

The tests, which lasted for a month, were made in all kinds of weather, and were wonderfully successful, failing only once, when heavy snowdrifts over icy roads were encountered.

One of these routes is twenty-nine miles long, contains 140 boxes and accommodates 700 people. On this route the start is made at 10 o'clock in the morning, and the return to the postoffice is made at a little after 1. By using automobiles the carrier can leave the postoffice much later than with his wagon, and is thus enabled to deliver much mail received on the later morning trains that would otherwise not be carried until the next day. In addition to this the routes are covered in fully half the time required by the wagon.

These are two strong points in favor of the auto, yet there is still one other which has been brought out, and that is the improvement of the roads which would follow the installation of an automobile system. With the excuse as a lever, that the rural route will have to be discontinued over any certain portion of road because of its poor condition, a community would go to a great deal of expense rather than have the threat carried out.

An example of this can be cited. On route No. 4 was a piece of road that was almost impassable. Mr. Priddy went to one of the leading farmers on the route and pointed out that unless it was remedied they could not expect to receive his mail by the auto. Although the section referred to was quite a distance from his home, Mr. Priddy's companion replied at once, "If those people will not fix their roads I and some of my neighbors will." And they did.

The following report of Postmaster Priddy gives a good idea of the work performed:

December 18, Route No. 3, Carrier E. H. Hendereson; length, 29 miles; number of stops, 125; number of pieces delivered, 409; pickup, 59 pieces; weather, clear; condition of roads, partially frozen and very muddy; amount of gasolene consumed, two and one-half gallons; time for delivery, three hours and fifty-six minutes.

The Clemick-Hirsch Co., Milwaukee, Wis., makers of gasolene motors for launches, has entered the automobile field, and expects to have its first car ready by February.

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The Automobile Club of America,
National Association of Automobile Manufacturers.
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Franklin's Coal Scuttle.

Both seasonable and suggestive is the little Christmas remembrance which C. A. Benjamin, of the H. H. Franklin Manufacturing Company, sent to a number of his friends last week.

It was a match safe made in the form of a coal scuttle, and with it went a letter, part of which follows: "Under separate cover we are mailing you a reminder of a recent great disturbance, the outcome of which has been the cause of enough inconvenience and annoyance to make a man swear like a pirate. We trust you are not in this class. We sincerely hope your coal bin is full to the limit and your cup of joy is working overtime. When you look at this little match safe, keep in mind that no motor car of its class matches the Frankling, and we hope things will be red hot with you from now on."

How the De Dion was Tested.

In order to test the new "Popular" De Dion car, the well-known French concern recently sent it round Europe on a course whwich included Geneva, Turin, Florence, Bologna, Venice, iVenna, Prague, Dresden, Berlin, Hanover, Amsterdam and Brussels, making 3,100 miles in all. The car had to traverse the Juras and the Alps, and also to climb the famous Semmering mountain near Vienna. It also had to travel along the notorious Austrian roads, with their deep ruts running crosswise and dos d'anes, and had to negotiate the equally famous granite setts of Belgium.

Using the Compression as a Brake.

If the compression of the engine, with a slow speed in, is being used as a brake, take care not to switch the spark on again suddenly, as great strain will be put upon the engine and gear. Crankshafts have been broken in this way.



THE AUTOGAS DRY BATTERIES.
80 per cent. more efficiency than any other.
Standard Everywhere.
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ARE ALWAYS RELIABLE

Diamond Chains were fitted to 14 of the 16 vehicles which won First-Class Certificates in the New York-Boston 500-mile reliability contest.

The makers of the WINTON have decided to equip ALL THEIR CARS with Diamond Chains.

FEDERAL MANUFACTURING COMPANY
DIAMOND CHAIN FACTORY— Indianapolis



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Vague Ideas of Chains.

"Some otherwise well informed autoists seem to have the very vaguest ideas about chains," remarked a tradesman the other day in conversation with the Motor World man.

"There are men who come in here and ask for complete chains or parts, and a little talk develops the fact that 'pitch' is Greek or Sanscrit to them. Even width is a sealed book, as far as knowing how to measure a chain is concerned. So many chains are alike that we make out pretty well, but frequently we are quite unable to divine what is wanted.

"We try to impress on users of cars that the pitch is the distance between link centres, not, as some think, the length of the open space into which the teeth of the sprocket teeth fit. A one inch pitch chain is just as many inches long as it has links.

"Chain widths, on the other hand, are the measure of the space or clearance between the side links, not the distance outside of links. With a car using a chain ½ inch in width, for example, the teeth of the sprocket wheel will be a scant ½ inch wide—just enough scant usually to allow clearance so the chain won't bind as it passes over the teeth.

"If people would only bear these facts in mind when ordering chains we should get rid of a lot of trouble, and they would be better served."

It is an excellent idea, especially during the winter, to protect the lower part of the engines. It is surprising how much work a leather or similar material cover slung from the sides of the frame and carried beneath the engine flywheel and gear box will save. Though such an arrangement is not a thing of beauty, it is extremely useful, if not absolutely necessary.

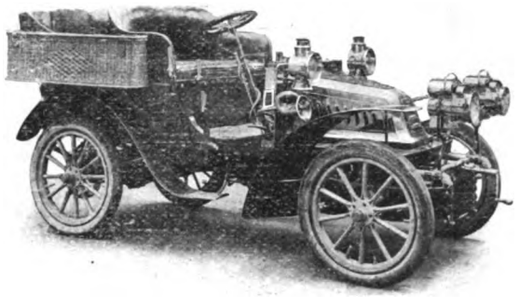
How They Tricked Miller.

"Had a cute trick played on me last week," remarked Chas. E. Miller, the well known jobber, pulling a reluctant smile.

"A man came in and got a pair of lamps 'on approval.' He paid cash for them—list price—and was to return them if they did not suit. A day or two later he brought them back, and we paid him his money without hesitation.

"Then by a mere accident we learned what was back of the occurrence. The lamps had been procured for a competitive lamp concern—a big one, too—taken to a photographer and 'snaps' made of them complete and in parts and examined minutely. This was bad enough. But it was adding insult to injury to return them and get their money back.

"I guess I am too honest to cope with people like this," concluded Miller with great soberness.



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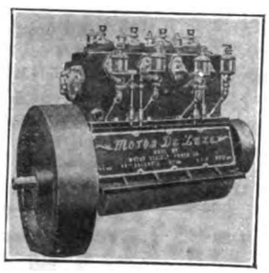
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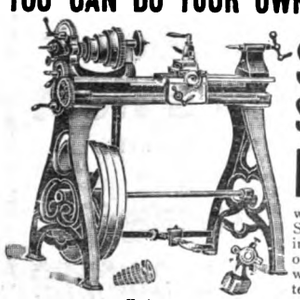


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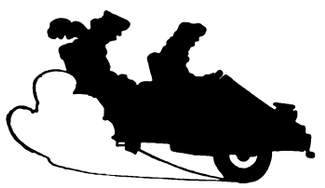
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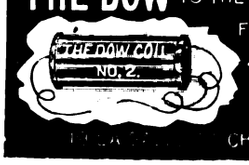
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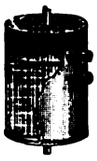
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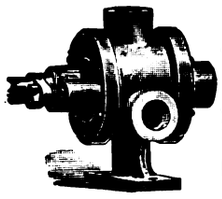
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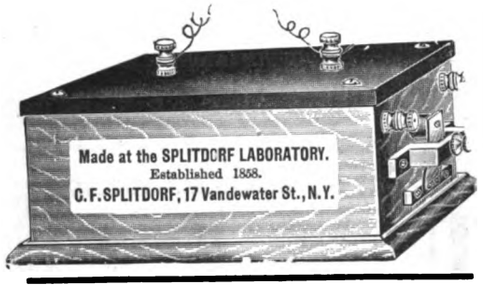
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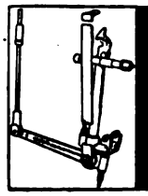
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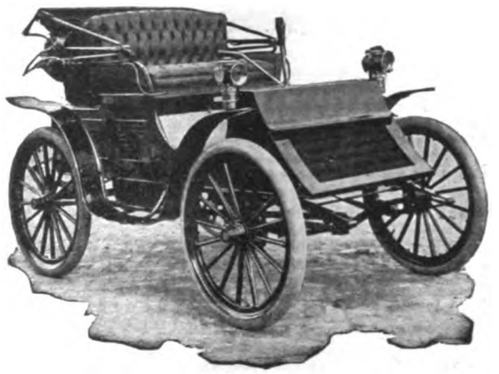
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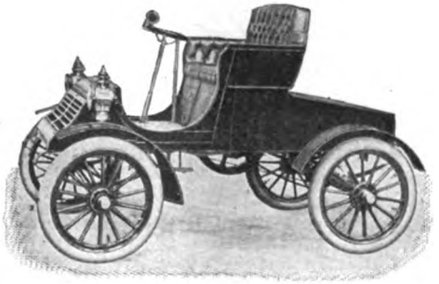
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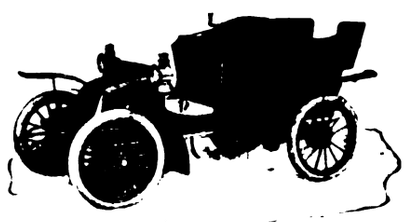
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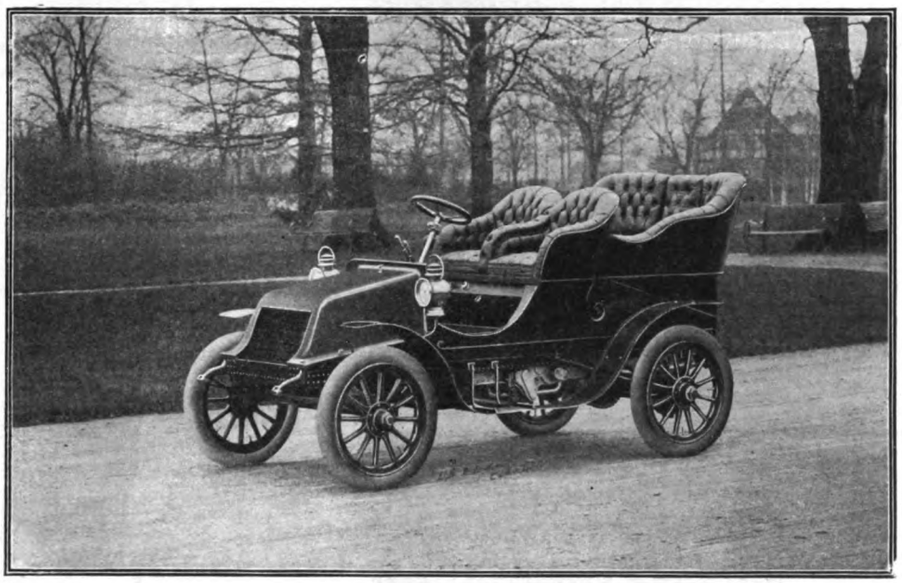
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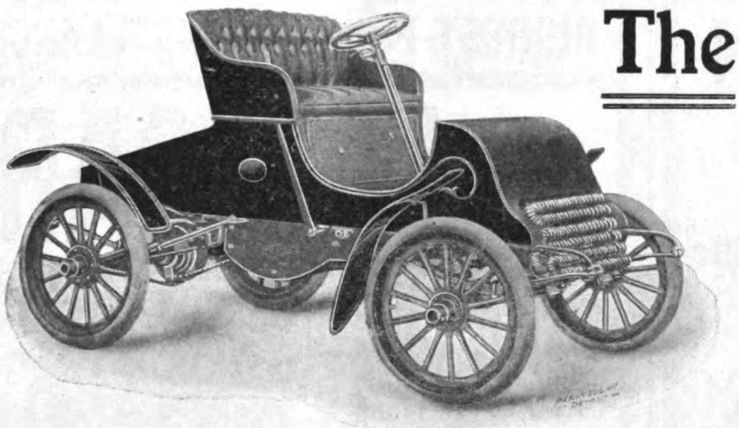
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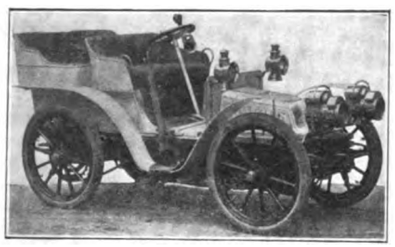
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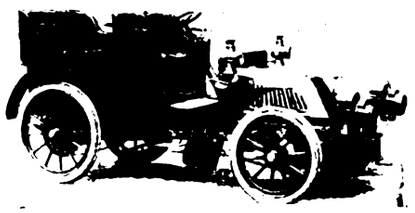
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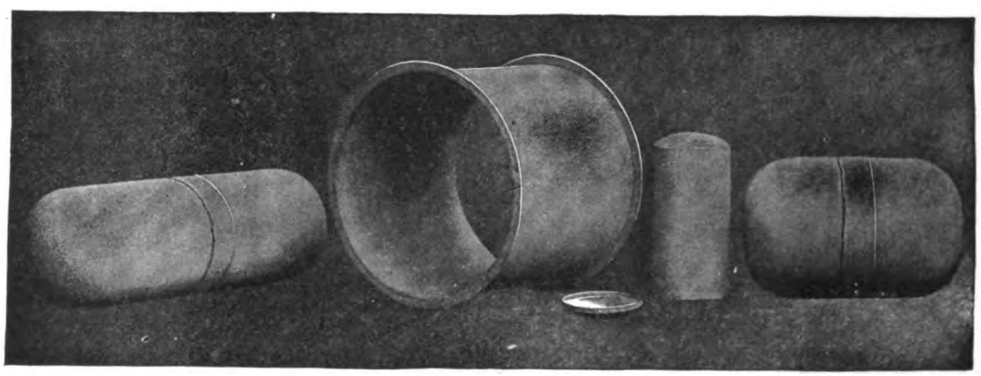
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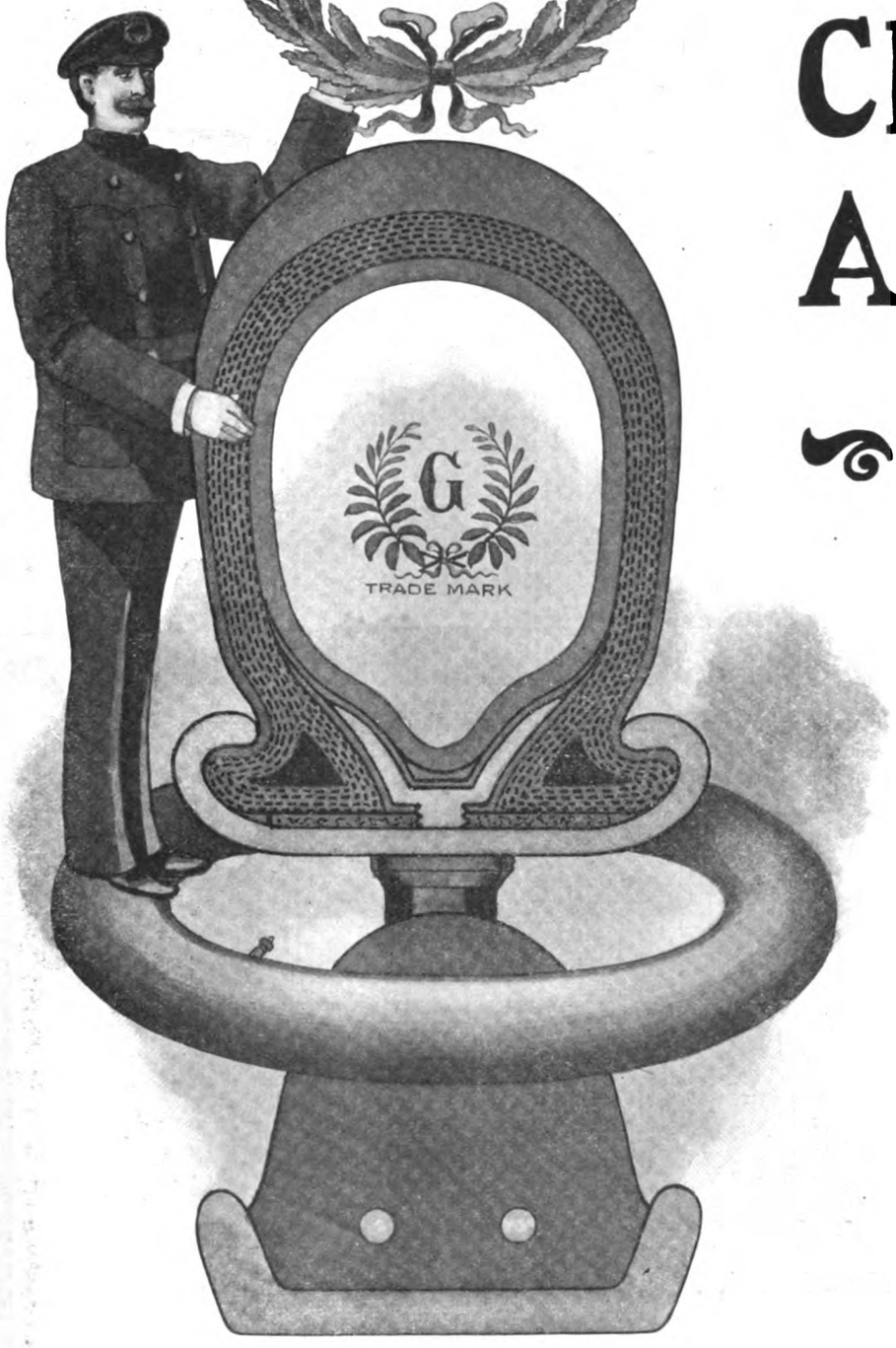
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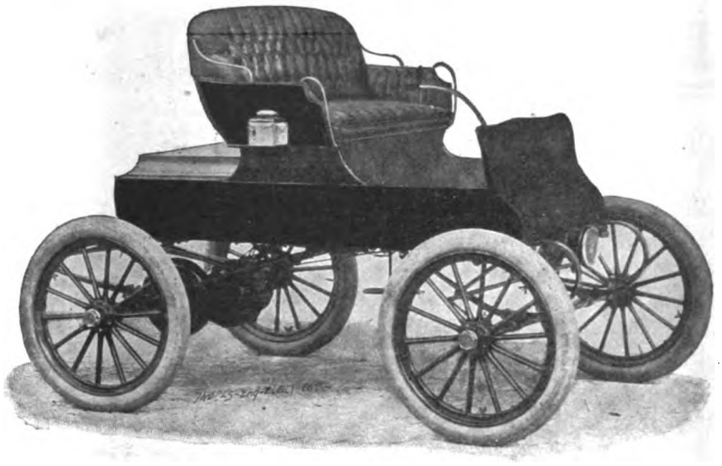
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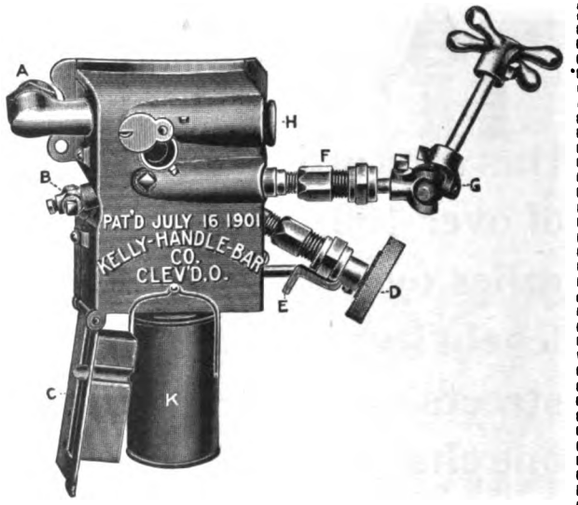
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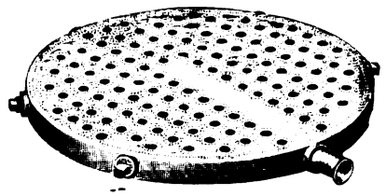
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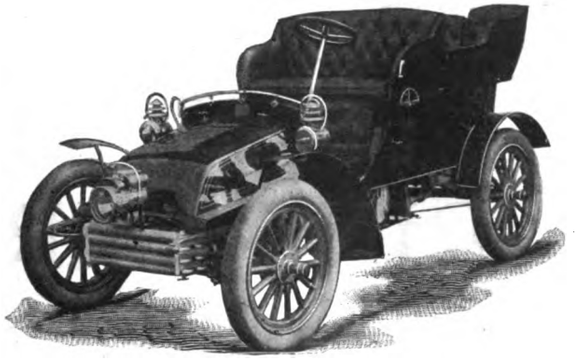
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Every prominent maker of Automobiles, Parts and Sundries will exhibit. Morning sessions free to the trade. The opportunity of the year to see and show your customers all the new models under one roof.

February 14 to 21.

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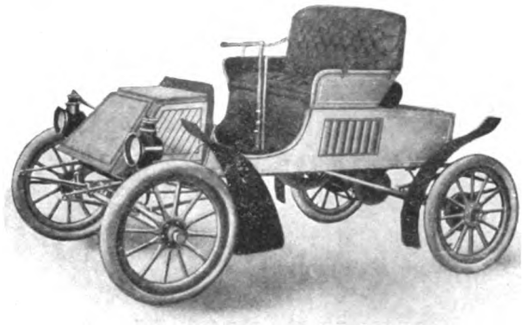
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THIS DESCRIPTION FITS ONLY THE

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Equal in appearance and service to the $2500 kind, but at one-third the price. Six horse power, 78-inch wheel base, artillery wheels, 3-inch tires, drum brakes on rear wheels acting independently of the chain, constant level automatic carburetter; these are a few of the points that make it the best value for the money on this or any other market.

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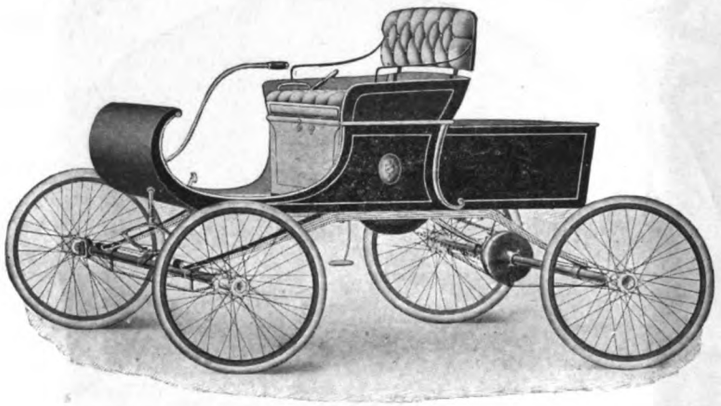
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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, January 8, 1903. No. 15

CUP COMMITTEE MEETS

Orders All Candidates to be Ready April 11—Winton Enters no Protest.

In the action taken by the Race Committee of the Automobile Club of America last Monday, there was strong indication of a desire and an intent to hold preliminary trials for the international cup race candidates, if such a thing is at all possible. The meeting of the committee was held behind closed doors at the club, and it is known that there was a lengthy discussion of plans for a trial contest, and that various forms of tests were considered. What these were would not be revealed by any of the committee, the full quota of which was present. The committee comprises G. Isham Scott, chairman; Dave H. Morris, Harlan W. Whipple and A. R. Shattuck.

The official announcement made by the committee after the meeting was that all candidates for the race team must have their cars in New York City ready for whatever call upon them the committee may choose to make, by Saturday, April 11. Although this announcement was prefaced by the explanation that the move was a precautionary one, due to the fact that under the rules the race may be held as early as May 15, it was generally understood that there is no likelihood of the race being held before June or July, and that the order was issued because the committee had positively decided to hold trial races. It was further announced that no nominations would be received after February 1.

Messrs. Percy Owen and H. S. Harkness both were present at the meeting and went before the committee by invitation. The nature of their communications was said to be confidential, but from what could be gleaned it had to do with suggestions for the contest, and in no way related to a protest against the selection of cars not made by established manufacturers. The fact that a protest was not made by Alex. Winton or his representative, is a further indication that the selection of the competitors will depend upon a practical test, in which case Mr. Winton has no objection to competition against individual builders.

An announcement was made by the committee that a second machine has been entered by C. W. Matheson, of Grand Rapids, which makes six candidate cars in all, one of which, that of Alex. Winton, has been formally accepted. The other five from which the committee has to select two, are the two Matheson cars, and those of H. S. Harkness, L. P. Mooers and Percy Owen.

Dame Rumor still has it that a White steamer is apt to be a candidate before February 1.

Blood from Kalamazoo at $400.

Organized with ample capital, a strong board of directors, and having a $400 gasolene automobile almost ready to be placed on the market, the newly incorporated Michigan Automobile Co., Ltd., Kalamazoo, Mich., will undoubtedly prove a factor in the trade.

The concern will make the Blood automobile, the invention of M. E. and C. C. Blood, of the Kalamazoo Cycle Co. The vehicle has been tested in an exhaustive manner, and although the lightest as well as the cheapest, on the market, weighing only 400 pounds, is a thoroughly practical and reliable car. It will be of first class construction, its simplicity accounting for its extreme cheapness.

Property, with buildings and four acres of ground, has been purchased, and work will be started at once. It is expected that deliveries will be made by April 1.

At a meeting of the Board of Directors the management of the company was placed in the hands of these active officers: Frank D. Fuller, secretary and business manager; M. E. Blood, treasurer and general superintendent. C. D. Fuller is chairman of the board.

Buffalo to Hold a Show

One more city has been added to the list of those that will hold local shows. W. C. Jaynes, of Buffalo, N. Y., announces that he will hold an automobile and sportsmen's show in Convention Hall during the second week in March.

GASMOBILE IS OUT

Reorganization Finally Fails — Pan-Am Buys Machinery and Increases Capital to $500,000.

By the purchase of the machinery and stock of the Automobile Co. of America the Pan-American Motor Car Co. becomes possessed of the principal remaining assets of that company, and the latter will positively not continue the manufacture of automobiles. Incidentally, the Pan-American company, in which A. C. Bostwick is largely interested, has been reorganized, its capital stock increased and plans are on foot looking to the removal to a new factory.

Such is briefly the result of the negotiations that have been pending for some little time between the two companies, and which have been the subject of a number of more or less misleading paragraphs in the newspapers during the last few days. There is no consolidation or combination. The Pan-American car will not be built at the Marion plant, nor will the Rochet-Schneider or any other cars be manufactured there. The latter will be closed, and, if possible, sold.

To a Motor World man on Monday George F. Chamberlin, who was applied to for an accurate statement regarding the matter, said:

"How the reports published got out is beyond me. But they are utterly wrong. Speaking solely as counsel for the Pan-American company, I will say that these are the facts:

"The capital of the Pan-American Motor Co. has been increased from $100,000 to $500,000. The company has just acquired by purchase the entire machinery and stock—the latter including both complete cars and parts—of the Automobile Co. of America, Marion, N. J. This machinery is of the highest type, and cost a large amount of money. It will be removed at once—the work has already begun either to our present factory at Mamaroneck or to a new one

(Continued on page 450)

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MORE FRENCH FEATURES

How Some of the Most Famous Makers Have Improved Their Cars—New Steering Gear that Appears Sensational.

French Bureau Motor World.
2 Rue d'Abbeville.

Paris, Dec. 21.—Among the other cars at the show that bore evidence of no small refinement was the Rochet-Schneider. They displayed a four-cylinder, 16 h.p. petrol car, with vertical motor placed in front and with mechanically operated inlet valves. The inlet and exhaust valves are interchangeable and are situated on opposite sides of the cylinders. There are, therefore, two cam shafts. The valves can be removed or inspected by unscrewing a stirrup which holds down a round plug slightly larger in diameter than the valves and which, when removed, allows the valves to be easily withdrawn. On the exhaust side, these plugs contain the ignition arrangements, which can thus be instantly taken out and examined. The ignition is obtained by the rupture in the explosion chamber of the alternating current from a magneto which is driven from the cam shaft. In order to produce the rupture there is a vertical rod for eoch cylinder, which is rotated in one direction by a cam on the half-speed shaft and in the opposite direction by a steel wire spring, which is coiled round it. At the upper end of this rod there is a little hammer, which strikes a lever which is pivoted on a center in the plug above the exhaust valve. By the other end the lever is held in position by a spiral spring, which maintains a contact in the explosion chamber, between the sparking plug and a contact finger, which is mounted on the same shaft as the lever above mentioned. When the cam releases the vertical rod, after having rotated it, the spring brings it back quickly and causes the little hammer to strike on the lever, overcoming the pull of the spiral spring and breaking for an instant the contact in the explosion chamber, and thus causing a fat spark. The vertical rods are free to move vertically, and over the tops of the four rods there is a bar working on eccentric slots in such a manner that when the bar is pushed forward the rods are depressed and the cams attack them earlier and causes the rupture to take place sooner, thus advancing the ignition. Should there be a back explosion and the engine reverse, the cam pulls the vertical rods into such a position that they cannot strike the levers, and so no harm is done. The frame of the car is of armored wood, and this is the only direction in which the Mercedes practice has not been followed. The change of speed is accomplished by means of two sliding gears, or "train balladeur," worked by two rods which project from the end of the gear box and which carry at the end of each a stirrup. The change speed lever can pass between these two stirrups only when it is in the center position; that is to say, at the dead point. It has a side motion, so as to be able to engage with either of the stirrups, one of which works the reverse and first speed and the other of which works the second, third and fourth speeds. It is therefore possible to pass from the dead point direct to any speed without passing through the others. The transmission is by chains. The cooling of the cylinders is accomplished by means of a tank radiator of the Mercedes type, cooled with a fan placed just behild it, the water being kept in constant circulation by means of a pump.

A new steering gear is just being put on the market by Messrs. Malicit & Blin. The first model is exhibited at the show, and it promises to take the trade by storm and replace all other existing systems. All gears, racks, sectors, double nuts and screws are done away with in this motion, which consists in a cam movement. A V shaped cam fixed to the steering pillar works backwards and forwards the lever which moves the front wheels. It transmits its motion through two conical rollers mounted on the lever in question. When highest part of the V shaped cam is on top of the conical rollers the wheels of the car are straight, and it is quite impossible to turn them, except by the steering wheel. As the latter is turned in one direction or the other, the V shaped cam forces the conical rollers to the right or left, and thus turns the front wheels. There is a total absence of play or back lash, and the whole motion is extremely simple and is inclosed in an oil bath.

The Peugeot Company have definitely abandoned the horizontal motor placed in the rear of the car, and have replaced it by the vertical cylinder placed in front, and it is evident from the number of visitors which were constantly attracted to this stand that this change of tactics is thoroughly in favor with the customers. Indeed, the 12 h.p. and 18 h.p. chassis of 1903 made by the Peugeot Company follow very closely the Mercedes lines of 1902. True it is that Mr. Follow, the managing director, claims that instead of copying the mechanically operated inlet valves from Cannstadt, they were first in the field and had them in experimental cars in 1901. The 12 h.p. and 18 h.p. cars of the Peugeot Company have each four cylinders, four speeds and reverse, and stamped steel frames. Both electric and magneto ignition is employed, the former only having an arrangement to advance or retard the sparking. The change of speed gear is of the usual type, with one sliding sleeve carrying three gears; the fourth speed is direct, and is similar to the Mors and Georges Richard type, adopted last year for the Paris-Vienna race. The transmission is by chain, and there is a compensated brake on the hind wheels, which is appplied, drawing forward a bar placed across the car and pulled by its center; at each end of this bar the brake rod of one wheel is attacked, in such a manner that the rod takes a position which compensates the brakes and makes the friction on each one of them the same. The 12 h.p. motor gives about 15 on the brake, and the 18 h.p. motor gives about 22 h.p. The apparatus for making the rupture of the magneto current in the cylinder is exceedingly simple.

Mr. Leon Serpollet still retains his place at the head of the French manufacturers of steam cars, and exhibits a new model for 1903.

Like the productions of the manufacturers of petrol cars, the power of the Gardner-Serpollet increases year by year, whilst at the same time the weight decreases, strange to say, without the construction being any the less robust. Thus, whilst the 1902 model 12 h.p. car weighed 1,000 kilos, the 1903 40 h.p. car only weighs 920 kilos for the touring model and 100 kilos less for the racing model. The new features are two in number. In the first place, the pump which supplies water to the boiler as the steam is required is operated in quite a different manner. It will be remembered that in the old model a series of cams on a shaft driven by the engine gave the pump more or less lift, so that more or less water was forced into the boiler to increase or decrease the speed of the car, as the case might be. There were, therefore, three or four distinct steps in the feed, corresponding to the different cams. This system, which presents certain disadvantages, has been replaced by an eccentric link and a slide valve, which gives a more gradual and easier regulation to the feed water. The second improvement is in the lowering of the boiler and the reduction in the number of the elements, which at the same time retain the same heating surface as before. The lowering of the boiler of course lowers the center of gravity of the car, gives it a smarter appearance and makes it easier to mount the carriage work. On the Gardner-Serpollet stand there is also an omnibus, with a 20 h.p. motor, arranged to carry 14 passengers, at an average rate of speed of 16 miles per hour.

The Darracq car has been completely changed, and the 1903 pattern presents most of the features of the Mercedes car of 1902. The most interesting of the new models are the two-cylinder 12 h.p. and the four-cylinder 16 h.p., which both have frames stamped out of U steel, throttle carburators controlled by a lever placed in the steering wheel, mechanically operated inlet valves, and honeycomb radiators. It is claimed that these cars are very silent and easy running. Darracq & Co. have turned out over 1,000 cars during the year 1902, and have in hand a series of 1,200 cars for 1903.

(Continued on page 456.)

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GASOLENE MOBILE COMING

Manager Gallaher Admits Truth of Reports—Plans New System of Storage and Repair.

Without any blare of trumpets or banner bearing parade E. B. Gallaher, of the Mobile Co. of America, has moved the executive offices of the concern from Tarrytown to New York and established them on the second floor of the building at No. 1,709 Broadway, corner of Fifty-fourth st. After February 1 the possession of the big corner structure will be taken, but at present only the second floor is used.

The new gasolene model which it has been reported was to be an added Mobile product, Mr. Gallaher acknowledged, will soon be an accomplished fact. It will be a big car with a tonneau, but it will not be finished in time for the shows.

Mr. Gallaher has some ideas of his own concerning the extensive business that the firm proposes to do in the big building which is so especially adapted to automobile uses. He thinks that there is now too much uniformity in the prices charged for storing cars, and that this uniformity is the cause of much dissatisfaction on the part of patrons. For instance, a man who owns a runabout feels that it is not just that he should pay as much for storing it as does the man who owns a big touring car. An investigation by Mr. Gallaher has satisfied him that in many places there is a fixed price of so much a month for storage without any distinction being made between big machines and small ones. It is Mr. Gallaher's intention to remedy this, so far as the new Mobile station is concerned, by arranging a scale of prices, varied in proportion to the number of square feet that the cars occupy on the floor of the garage. Thirty dollars a month, for instance, will be about the ruling price for touring cars. Runabouts will be stored for about $20, and the cars of intermediate sizes will be scaled at about $25.

Another idea of the enterprising manager is that of having a special rate for repairs also, in order to do away with the common practice of promising every one to have a job done "right away" and then keeping the patron waiting an extra week. Mr. Gallaher proposes to have his scale of prices for regular repairs, which will be attended to in their order. Repair jobs taken at the regular rates will not be promised "right away," but for those who are in a hurry there will be accommodation in the way of a "rush order" list. Those who want their work done at once and are willing to pay for it will be put on the rush list, and such jobs will take precedence over everything else in the place. For rush jobs an added charge of 25 per cent on the face of the bill will be made.

Regarding Future Reliability Tests.

Expressions of opinion have been asked from its members by the National Association of Automobile Manufacturers regarding future automobile tests.

French and British tests of the last year are touched upon at length, and the system of marking used in the latter quoted. The Motor World is also laid under contribution, the interview with a well known automobilist criticising the recent reliability contest and comparing it with the British event, to the advantage of the latter, and suggesting that every stop be penalized, are reproduced. Proceeding, the following list of questions is propounded by the association:

First—If 100 points be allowed as the maximum for absolute perfection, how many points do you think should be given for each of the features, named in alphabetical order, as follows: Appearance; comfort; condition of car at end of test; cooling system; gasolene consumption; hill climbing; noiselessness; power and weight; reliability; safety (steering mechanism and brakes); simplicity in handling, and speed?

Second—What other features, if any, should receive points, and how many points for each such feature?

Third—(A) Should the contest be over a long course or a short one of, say, 100 miles? (B) If you favor the former, would you support the proposal that there be a run from New York to Chicago about October, 1903?

Fourth—Or do you recommend a test lasting several days, where the machines could run from a central point and back each day in preference to a long distance run?

Features of Vanderbilt's New Coupe.

Something new for New York in the line of private motor carriages has just been imported by W. K. Vanderbilt, jr. It is one of the Mors coupés, and presents a striking contrast to anything of the sort hitherto seen here. It has the long, tapered hood of the racing car in front, finished in red and black, as is the whole car. From the step on the mud guard one reaches a front platform on the right hand side of which is a chauffeur's seat. From the left hand side of the platform the coupé is entered by the only door it has. The passenger compartment is glass inclosed on the sides and front. A main seat for two runs across the back, and there is a little seat for a third person on the front side next to the door. The interior is handsomely upholstered in cream colored velour and corduroy. A flexible speaking tube with gutta percha mouthpieces runs from the inside to the chauffeur's seat, and the end next the chauffeur is fitted with an adjustable whistle of the old style that boys make. The car has a four cylinder engine of 26 horsepower. It is kept with the rest of the Vanderbilt motor string at the garage of Barry & Hayes, at No. 33 West Fifty-eighth street, and altogether is a very stylish looking carriage.

CRYDER HEADS MOYEA

Former Gasmobile Manager Organizes New Company—Has Car and Capital in Hand.

While the Automobile Co. of America is now definitely deceased, its receiver and former general manager, Henry C. Cryder, will continue in the motor vehicle trade as head of the Moyea Automobile Co., which will make its formal bow in Space G at the New York show.

The company was quietly organized this week with a capital of $100,000. It will locate, probably, in Middletown, Conn., but this is not yet definitely settled. Sidney Dillon Ripley and several other of the wealthy stockholders in the Automobile Co. of America are identified with and are financing the new Moyea Co.

Its car will be styled the Moyea, and will be practically a replica of the Rochet-Schneider, one of which Mr. Cryder has had built in this country, and which has been in commission for some little time.

Recent Incorporations.

Peoria, Ill.—The Scheefer Investment Co., with $12,000 capital; to make motor cars. Corporators—Gustav Scheefer, Hugh Moody and Judson Starr.

Boston, Mass.—Park Square Automobile Station, with $25,000 capital; to make and deal in automobiles. President and treasurer, Thornton Parker, Boston, Mass.

Kalamazoo, Mich.—Michigan Automobile Co., Ltd., with $150,000 capital; to manufacture automobiles. Corporators—Dallas Boudeman, W. E. Upjohn, F. D. Fuller, Charles S. Fuller, M. E. Blood, C. A. Dewing, J. H. Dewing, P. L. Abbey, C. C. Blood, Ira Ransom, A. H. Rockwell, G. Vandekeeke, J. D. Scheell, E. H. Hinkley and H. H. Everard.

To Attend Cup Races.

Indications are to the effect that there will be quite a large party of Americans going abroad next spring or summer to attend the race for the Bennett Cup. Percy Owen, of the Winton company, has already arranged to take with him a party of friends, and says he knows of one or two other parties being formed. It might not be a bad idea for the A. C. A. to get up a club excursion, so that the American visitors might go in a body and by arriving on the scene in force demonstrate the interest in automobiling that there is on this side of the pond.

Dinsmore Named as Delegate.

For the American delegate on the international committee that will have charge of the arrangements and the appointment of officials for the Bennett Cup race, the Automobile Club of America has named Clarence Ray Dinsmore.

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AND
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P. DESMARAIS & CO., Bristol, Conn. BANKER BROTHERS COMPANY, Philadelphia, Pa. R. V. CONNERAT, Savannah, Ga.
OHIO MOTOR CAR CO, 317 Huron St., Cleveland, Ohio. NATIONAL AUTOMOBILE & MANUFACTURERS CO., 26 Fremont St., San Francisco, Cal.
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The Cup Race and Its Meaning.

If nothing else comes of it, the decision to send an American team to contest for the Bennett Cup next spring has served one good purpose. It has aroused the spirit of emulation, and made American manufacturers enter the field as competitors for international road racing honors. When it is borne in mind that in the past these international road races have been the "trying out" ground for the changes makers contemplated incorporating in their cars, the importance of the move will be seen.

It is odd that the donor of the cup, an American, although not often seen in the country of his nativity, should have had to wait until the fourth year of the competition before seeing America represented among the competitors, especially in view of the conditions of the race. Sight is often lost of the fact that the motives that actuated James Gordon Bennett in offering the trophy bearing his name were patriotic and intended to stimulate the automobile industry everywhere. It was expressly stipulated that each contesting car should be the honest product of the country entering it, the handiwork of its craftsmen, the triumph of its designers. Lock, stock and barrel, or, to be more accurate, from tire to transmission gear, from bonnet to body, from motor to muffler, it was to be entirely of native origin. Not even parts of fittings could be imported. Until the industry of a country had so grown that it could produce every iota of manufactured material that entered into the composition of the car, that particular country was barred from the contest.

At first France alone was able to comply with these drastic conditions. Then Germany joined issues with his old enemy, Gaul, and was followed by that other foe across the channel, the British, no less. Now America takes its place in the ranks. It has reached the time when it could make its declaration of independence and, disdaining help of any kind, enter cars to contest on their merits.

A step like this always marks an epoch. Whether we win or lose—and perhaps even more if we fail to make even a respectable showing—we are in the race to stay. We cannot afford to take our hand from the plough, but must, like England, extract experience from defeat, take the lesson to heart, and eventually turn failure into success.

Relatively a Road of Roses.

"Yo' talk about yo' coons a-havin' trouble."
—Popular song.

"There are others."—Bowery classics.

It is well occasionally to turn a really bad thing over and search for a view that is not quite so bad as the others, even if it cannot be truly called a bright side. Holiday time is a season for optimism, too.

There has been a tremendous lot of bewailing about the persecutions that the automobilist has had to endure and in the main it has been justified by the facts. The wailing and the resentment have been strenuous, but, after all, have the conditions been so terrible as those that have been met with by former innovations similarly radical? On the whole has not the automobile with all the undeniable intrinsic objectionability, its noise and smell and early unreliability, made its way rather easily? The steamboat and the railroad encountered prejudices and hindrances a thousandfold greater than those which have beset the automobile. Yet the motor wagon on the highways is just as radical a departure as either of the other inventions.

Even so recent an innovation as the bicycle had greater opposition than the motor car has met. In the anniversary number of the "Bicycling World," published December 18, in celebration of its twenty-fifth birthday, there is a historical recital of the vicissitudes of the early days in cycling that is calculated to make not only wheelmen, but also automobilists, open their eyes and reckon that by comparison the motor carriage has travelled over a rose strewn road. Eminently respectable taxpayers when they mounted the early bicycles were struck by the whips of coachmen; they had dogs set on them; they were stoned and even shot at; they were arrested on trumped up charges; they were driven first from the sidewalk by one officer and then from the carriage way by another. There seemed to be no place for them on the face of the earth. They were arrested for riding on Sunday. They were arrested for riding at night, and they were arrested for riding in the daytime during certain hours. It was ten years after cycling became popular before the parks and highways were thrown open to the new style of vehicle. Before that wheelmen had to be examined as to ability, licensed and taxed. Tens of thousands of dollars were spent and incessant battle waged for a decade before the rights of wheelmen were recognized.

How has it been with the automobile? Within three or four years after the appearance of the first practical, yet very faulty, motor cars, laws were passed opening all roads and parkways to them. Except in a few places they have not had to submit to license tax. The worst they have had to encounter has been persecutions because of speed by country constables, and in a measure this has been a retribution brought upon all by the recklessness of a few.

All things considered, the road of the automobile has not been unnaturally hard. Comparatively, it has been welcomed with open arms. "The world do move." The prospect brightens and, entering a new year, there is cause to rejoice that matters are as well as they are and promising of better days.

The Paris Show.

One thousand cars on exhibition, valued at upward of $5,000,000; thirty thousand people in attendance in one day! Opened by the President of the republic, for ten days

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the Mecca of fashionable Paris, thronged with sightseers and buyers, the culmination of a succession of shows of ever increasing brilliancy and eclat! Such was the automobile function in the Grand Palais at the French capital which came to an end two weeks ago.

In 1901, and previously in 1900, it was predicted that the pinnacle of popularity had been reached; that public favor could do no more than it had already done; that the exhibits themselves could show no further advance.

But in each case the pessimistic prophecies proved erroneous, and each succeeding exhibition was pronounced better than the last. The latest show, the one under consideration, has come and gone without the infliction of any prediction of the sort, so certain does it seem that the tide still has far to rise.

As has always been the case, the show afforded much food for reflection. The mechanical features of note, whether shown then for the first time or there seen to have been generally adopted, will naturally take a lot of thinking over. Are they destined to become permanent, or merely of a transitory character, to disappear before another show rolls around? Everything indicates that the former is the case, but there have been such indications in the past, only to prove delusive.

Reviewing briefly the more important developments, they have every appearance of being distinctly good.

The steel frame, wood reinforced, was never anything but a makeshift, a hybrid that could not last. Steel alone can be made to do the work, and a U section is emphatically the one to resist torsional and other strains. The practice of having a secondary frame to carry the motor was always open to objection; and it was only a question of time when a way would be discovered to fasten the engine securely and rigidly to the frame. The way has been found, in the opinion of a number of exhibitors. Carburetter improvements also figure prominently, and the plan of automatically securing a uniform mixture, no matter whether the engine be travelling fast or slow, is so obviously a step in the right direction that it stands a good chance of being generally adopted in spite of the additional complexity necessitated.

As to mechanically operated inlet valves, there seems no reason to doubt their eventual success. Brought out a year ago by the concern that has almost succeeded in Germanizing the French trade, it was apparent that they were still in a minority at the Paris show. But they had made their appearance on dozens of stands, and the inference is almost irresistible that they will yet sweep the boards. Like the automatically operated carburetter, the inlet valve adds more machinery; but it also causes a positive opening of the valve, and that is almost sufficient reason for its being.

In short, we are forced to the conclusion that the Paris novelties this year are fixtures, and not, as has sometimes been the case, fads, ephemeral in their character.

Condensers Must Come.

No single problem confronting the makers and users of steam vehicles exceeds in importance that of carrying sufficient water for runs of reasonable length.

The time honored estimate of, roughly, a gallon of water for each mile travelled still holds good. As a rule, therefore, a car carries a supply of water sufficient to run it about 25 miles, say 25 gallons. Occasionally extra large tanks are fitted, sometimes having a capacity of 50 gallons, thus giving a radius of action that is at least reasonable. But tanks of this size take up much room, and when filled with water considerable weight is added to the vehicle. Altogether, this method of grappling with the problem has many disadvantages.

Condensers offer an almost ideal solution, as is well known, and the wonder is that they have not been used extensively in this country.

There are, of course, disadvantages connected with their use—extra cost, added complexity, the difficulty of effecting a separation of the oil and water. As long as there was no urgent demand for a device of the kind these drawbacks could be counted upon to turn the scale against them. Similarly, when it becomes plain that condensers must be fitted to thoroughly first class steam cars, ways and means of doing so will be devised.

In the British market the use of condensers is virtually compulsory, visible exhausts being illegal. Confronted with this condition, it is always met by the employment of condensers.

In the rehabilitation of the steam car, its evolution from an underweighted, underpowered, poorly constructed piece of mechanism to one adequate to all demands made upon it—a rehabilitation that has been going on for a couple of years— the condenser must play an important part. In this case, willful waste makes woful want, and users will not go on indefinitely pouring water into tanks only to have it passed out as useless exhaust. It can be utilized again, and this will eventually be done.

If the near future does not see the adoption of condensers by more than one concern, we shall be very much surprised.

Beware that Sprinkling Law!

Now that the holidays have passed and the Board of Aldermen are meeting again it will be well for the automobilists and other organized bodies which are interested to remember that there is in the hands of the very honorable body a very obnoxious ordinance relative to street sprinkling. This is the bill drawn by Alderman Marks, empowering the several borough presidents to make new contracts with the author of the present sprinkling nuisance, the Street Sprinkling Association. If passed this ordinance would do nothing more than to widen the sphere of the present contractor's vile and dangerous work.

It is impossible to believe that if this sweet scented piece of "legislation" for the benefit of a corporation that has been an offender for ten years is enacted by the "honorable body" Mayor Low will sign it. Yet the Mayor is a busy man, and, although the jobbery in the bill is palpable to those familiar with the situation, it behooves the representatives of the automobile, driving and cycling organization who do not enjoy slimy and slippery asphalt to see that he is acquainted with the facts of the situation.

Now is the time to act in this matter, for the bill is apt to be in the hands of the Mayor for signature within a few days. It was made a special order of business for last Monday's meeting of the board, but did not come up. It is apt, therefore, to be brought up at the next meeting of the aldermen, which will be held on Tuesday, January 13.

Senator Cocks—he who was the first Long Island autophobe, and who was defeated for re-election last November—has issued his valedictory. It is, of course, a defence of the disgraceful law bearing his name and of the deluge of anti-automobile legislation that followed in its wake.

Now is the time for the exhibitors at the Paris show to come forward and tell us how many cars they disposed of. One concern makes the modest claim of 2,000. Next!

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Commentary

Not to pat my own back, but I can truthfully say that the remarks I have recently made regarding the state of affairs existing in the National Association of Automobile Manufacturers has caused not only a flutter in that dovecote, but have also caused a "divil of a thinking" in other directions—for example, on the part of at least some of the associate members. Although the outside world may not know it, they outnumber the active about two to one, and as one of them remarked to me last week, about the only privilege they receive is the privilege of paying $15 a year. He admitted that he had a prettily nickelled sign and had been requested to advertise the organization by adding to all his advertisements and printed matter the highly important fact that he was a member of the N. A. A. M., but some way or other he did not appear to think that that was $15 worth or that the associates were receiving their due. He acknowledged that he was being flooded with circular letters—advance copies of which are mailed to reporters who "push along" the secretary—asking a multiplicity of questions which he had neither time nor inclination to heed, and altogether conveyed the impression that he thought that associate members were entitled to attend meetings, share in the councils and make themselves heard or felt, even if they were not permitted to vote. It is not for me to say that the man was reasonable or unreasonable. I simply repeat his disgruntlement because it appears to show a direction in which the wind may blow.

* * *

And talking about the automobile manufacturers' association, you may recall what I told you would likely happen to the show as a result of that indorsement of an alleged "automobile daily" in which the I-am of the association betrays such a suspiciously holy interest. Well, as the date of the show approaches, let me add that unless there is "something doing" for the legitimate New York dailies the snubbing of the show that I predicted will be something to remember. Never mind what I know, but take my word for it, the editors and business managers are "wise," and unless a great change comes over the spirit of their dreams the trade will pay dearly for permitting itself to be "jollied" by a clever, wine opening foreigner, aided and abetted by the I-am in question. By the by, I hear that the foreigner, as "a token of regard and esteem," has presented the I-am with one of his office rubber stamps. I certainly can vouch for it that "puffs" of the I-am's car have been sent to the press bearing the rubber stamp of the foreigner's paper.

* * *

In this connection I am also in position to say that the I-am, having placed his "appropriation" with his great and good friend, the automobile daily, has a great scheme for getting advertising in the legitimate dailies during the show without paying for it. He has engaged one of the New York newspaper men as his "press agent" for the week. The duty of the press agent, a clever fellow, will be, of course, to send cleverly veiled stuff to the dailies, and if the dailies are not on their guard they will be "landed" good and hard. The I-am, I understand, first tried to hire the press agent of the show to sandwich his masked ads. in the show matter which he sends out, but to the credit of the p. a., be it said, he declined with several thanks.

* * *

Unless all signs fail there are going to be not a few heartburnings over who shall be chosen to represent America in the forthcoming contest for the James Gordon Bennett Cup. Furthermore, before the affair is finally disposed of there is most certainly going to be considerable very plain talking indulged in, during which some inside facts will be made public, which, however interesting they may be as showing the why and wherefore of certain things, will not tend to increase the public's already very poor opinion of how automobile racing matters are not managed in this country.

* * *

Upon my calendar I find this memo: "About this time look out for Edison interview." You see, I knew when I wrote that a year ago the thing was due to make its appearance at certain intervals, and always just about show time, hence this memo. of mine. True to precedent, Sunday's papers had the interview, and in it Mr. Edison announced that his great New Year's gift to the world was to be—the storage battery on which he has worked night and day for four years. Of this wonder Mr. Edison is quoted as saying:

"My storage battery is now ready for the market. We have begun to make them for sale, and they will be offered on the market soon after the New Year. I've tried them on three runabouts here for several months, and one of our machines had done as high as eighty-six miles on one charge. Oh, it isn't perfect yet; you know we never get those things exactly perfect, but it works, and anybody can handle it. It solves the traction problem."

The more you think of it the more you will be convinced that the year 1903, despite the ill omen of its total of thirteen, is going to be a great one if for no other reason than that it is to be the one in which this great battery is to be placed upon the market—perhaps.

* * *

A gentleman rejoicing in the name of Obendorfer, and by profession a theatrical treasurer, has just applied to the New York bankruptcy courts for relief from $3,906 of indebtedness, to meet which he has neither assets nor regrets. One-half of the amount of the gentleman's debts is for money borrowed, while almost 10 per cent, or, to be exact, $189, of the remainder is "for repairs to an automobile." There is a moral here somewhere if I had time to dig it out, but as I haven't, suppose you do so.

* * *

In connection with that little leaf turning experiment of a week ago, it is well to remember that the road which is paved with good intentions generally has a disinterested friend at every corner of it.

* * *

He's still at it. The "great" cartoonist to whose kindly consideration of the automobile I referred last week has followed his former libel with another. This time the alleged drawing is entitled, "The whiskey procession—where are you?" In this magnificent drawing first comes an automobile with a bewhiskered chauffeur labelled "The Distiller"; then an open landau with a smooth faced, preacher looking chap ticketed "The Wholesaler"; following comes a light side bar, sporty looking, trotter drawn buggy with a driver who wears a liverpad lettered "The Retailer." In the background are a lot of lunatics, hoboes, jailbirds, etc., bearing a banner upon which is blazoned "The Consumers." In the printed matter which always has to accompany the great works of art drawn by this artist, so those who see the drawings may know what they are, the cartoonist says: "The man who manufactures whiskey has his fast automobile. . . . Where is the automobile of the confirmed whiskey consumer? . . . If you are able to ride in this procession in the automobile, the carriage or the buggy, we have nothing to say." I wonder what it's all about?

* * *

A great many people who will never enter a race or indulge in a tour further than ten miles from home and one mile from a repair shop have wasted a lot of time thinking about what might happen if they ever did.

* * *

Chickens come home to roost, at least, those who understand chicken etiquette say that they do. Perhaps the French automobile chickens are seeking roosting privileges at their home station, because after we have heard so much about how all the world has stolen the Frenchman's ideas of how to make a first-class automobile, see what happens. A German concern—it couldn't be worse than that, you know—makers of the most famous automobiles in the world, and one which hasn't a single French idea in its construction, refuses to exhibit any of their new models at the automobile show in Paris, because, as the German so naively puts it, "of the way German ideas are annexed by French automobile makers"! Is it in the power of any one to have given French pride a blow which it would feel as severely as this German one? I do not believe so.

THE COMMENTATOR.

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GASMOBILE IS OUT.

(Continued from 361.)

on the New Haven road which we have in view.

"James E. Woodbridge, formerly with the Pratt & Whitney Co., Hartford, Conn., will we the vice-president and general manager of the Pan-American Co. Designer and Consulting Engineer Power has just returned from the Paris show, where he went to examine the newest cars and to purchase parts and materials that cannot be obtained here. In the new factory the work of producing Pan-American cars will be prosecuted vigorously and on a large scale.

"There is no change of name, no consolidation or absorption. Beyond the purchase of certain goods by the Pan-American company from the Automobile Co. of America there is absolutely no connection between the two concerns."

Ever since the ill fated Automobile Co. of America went into the hands of a receiver, about a year ago, there has been much speculation as to its future. It was stated with the greatest positiveness by those interested that it would be reorganized and resume the manufacture of cars—either the Gasmobile or others. The Rochet-Schneider was most prominently mentioned as one of the "others," and within a very few days it was asserted by those who ought to know that this would be done, everything being ready to go ahead on them. Within a week or two, also, rumors of dissensions among the stockholders became peculiarly persistent.

To set the matter at rest the Motor World representative asked and obtained an authoritative statement of the matter from a gentleman closely identified with such heavy stockholders of the Automobile Co. of America as V. Everit Macy and Sidney Dillon Ripley, and who was an officer of the company at the time the receiver took charge.

"Mr. Chamberlin's statement is correct," he said. "As to the Automobile company, it means that it will be closed up entirely. All idea of manufacturing will be given up. You may state this positively."

It was also learned from an equally authentic source that some of the stockholders of the Automobile Co. of America have acquired interests in the Pan-American company.

A statement showing the condition of the affairs of the Automobile Co. of America has been filed in the Chancery Chamber at Newark, N. J. It shows that the profit and loss account foots up to the sum of $18,166 22. Among other items contained in the report are the following:

CLAIMS DISALLOWED.

Paul N. Turner	$12,500 00
Charles C. West	5,000 00
John H. Flagler	17,069 34
American Motor Co.	2,475 63
Jos. Yolden (as a preferred claim)	2,900 00

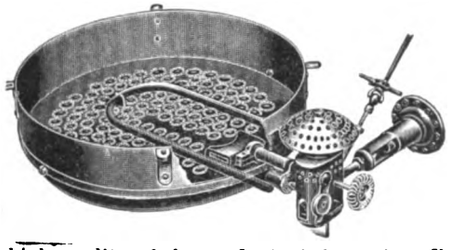
ASSETS.

Property sold by receiver	123,545 48
Paid out by receiver	142,061 70
Loss from sales of assets	115,925 15
Paid by receiver to creditors	105,747 77
Property and assets of the company sold at auction sale	10,000 00
Debts collected by receiver	6,888 44
Profit and loss account (loss)	18,166 22
Claims of creditors against the company	244,203 90
Creditors who did not present claims	9,983 89
Inventory of assets at time of appointment	343,229 99

There was also a mortgage of $248,229 99 on the plant of the company.

Forg's Burner and Generator.

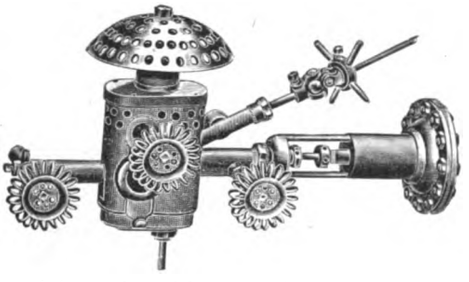
Forg automobile fittings have made for themselves a good name wherever they have been used, due to the exceptionally



high quality of the product of the maker, P. Forg, Somerville, Mass.

The three compartment burner and generator, both of which are shown, are excellent specimens of Forg quality.

These burners are of the reversed pattern, and are made with two partitions, thus making a three compartment burner; as each compartment is furnished with a separate



mixing tube, either or all of the compartments can be used at will.

The gasolene supply is carried through a pipe entering on the left hand side and passing over the burner in a O form, out on the right hand side, where it passes into the generator box. The pilot consists of a T shaped casting secured to the top of the burner between the gasolene supply pipe.

In starting up a small quantity of alcohol is burned in the cup provided for this purpose at the bottom of the generator; the heat from this generates gas for the pilot; the supply entering at the bottom, or stem of the T, throws a strong blue flame from each of the upper branches of the T against the gasolene supply pipe; the heat from this blast vaporizes the gasolene as it passes through the pipe; after the pilot has been burning a short time the valves supplying fuel for the burner itself may be opened.

The valve on the left injects into the left hand compartment, that on the right into the right hand compartment; the injector for the pilot, which it is intended should passes up to the seat and which also controls the entire supply of fuel, except that for the pilot which it is intended should burn at all times, and which can be shut off by the valve at the centre of the generator box. The rod passing up to the seat is provided, at the swivelled point, with a wheel, and can therefore be operated at this point without reaching up to the seat.

The generator box is made of sheet steel suitably perforated and so arranged that, while the fire will burn freely inside of the box, it will not blaze up on the outside, as in the case with generators of other manufacture. A suitable bracket is provided for use in attaching these generators so that they may be rigidly secured and retained in their proper position.

All connections are made outside of the firebox and at points easy of access.

Buck's Revolving Steam Engine.

What is termed a triple expansion, condensing, revolving steam engine, for use in propelling automobiles and other vehicles, has been invented by Henry A. Buck, of Brooklyn, and is being shown in that city.

Buck's dream has been to discover the means of solving the moast difficult problem of engineering—of saving the tremendous quantity of energy that is lost by steam engines of the most improved type and of applying the power direct.

He has now perfected an engine that he is confident has solved these problems.

The engine itself is described as being so simple that it seems to the layman impossible that it could even be what it is called, but a brief examination of its method suffices. It is a cylinder—a mere steel shell about twelve inches long and twelve inches high.

Through it runs a central shaft. A cross section would show that in the centre of this shaft a steel disk is riveted, and to this disk are attached three metal cylinders upon which the power or steam is applied. These three cylinders make the engine triple expansion, and the surfaces of each, on which the power is applied, are so arranged with series of grooves that an enormous area on which the steam acts is secured and the greatest amount possible of the expansive force in the steam is utilized.

The engine has no dead centre, no pistons, piston rings or rods, no steam chest valve, valve rods, eccentrics, cams, link motions, sliding parts, reciprocating parts or any of these things common to the accepted type of engines. It receives its steam at the highest temperature possible, and exhausts it at 40 degrees lower than any other engine now in use.

A 100 horsepower engine of this style made of cast iron steel, weighs about 300 pounds; is controlled by an ordinary governor, can be operated or placed in any possible position, even if inverted and bolted to the ceiling or against the wall, or horizontally or perpendicularly, running absolutely without vibration, can be instantly and smoothly started, stopped or reversed.

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FAMOUS FRENCHMEN COMING

Not Only Fournier but Others Due—Stories of French Trade Tricks Precede Them.

The news that Fournier is on his way here and that he has managed to secure space at the New York show has caused something more than passing interest in some quarters, because it was supposed that Fournier and the line of cars that he handles were to be represented in this country by a New York concern.

Fournier cabled to the managers of the show for space some time ago, and was answered that there was none to be had. It was his intention then to come over here and do business on his own account during the show. After being refused space it was reported from Paris that he had closed a deal whereby he would have representatives in this country, and that part of the Fournier exhibit at the Paris show would be shown here by his agents. Under these circumstances it would seem something beyond unnecessary for Fournier to take space as he has done and bring over cars himself, as it is reported he is doing, and a few are speculating as to his object.

Fournier obtained Space N in the restaurant of Madison Square Garden in a peculiar way. W. H. Webster, of the Webster Automobile Co., 10 West Sixtieth street, had taken Space N, but he found that the new car he wanted to exhibit would not be ready in time for the show, and having heard of Fournier's disappointment, he cabled to the Frenchman an offer to sell his space. Fournier accepted promptly, and he sailed for New York last Saturday on La Bretagne, accompanied by his business associate, M. Rabourdan. On this Saturday's French steamer will be M. Charley, the Mercedes agent; M. Clement, the automobile and motor cycle maker; M. Neubauer, M. A. Lamberjack, M. Lucas and M. Bertrand, the last three of whom have been identified with racing events.

In connection with the unexpected action of Fournier in engaging space at the show after having given an agency, some of the methods of the French makers and dealers, as commented upon by some of the Americans who visited the Paris show are interesting. Commercial practices are told about that are, to say the least, complicated. A man who wanted to place an order for some machines said he found it impossible to deal with the manufacturers, but that he could nevertheless get what he wanted if he went to some agent who was named by the maker. The partiality shown by makers for certain of their agents against all others, is most extraordinary if the makers have no interest in the agents' establishments, says this man. He tels how he went to a manufacturer ready to put down cash with an order, was refused, and when he remarked that he would go to the manufacturer's agent "A," the maker hastily advised him not to go to that one, but to "B," where he would get a better choice of deliveries.

Another intricate style of dealing that hardly would be indulged in by any reputable American concern is related by another American buyer who went to a French concern to place an order. They told him that they could not sell him machines for export because they had given an exclusive agency for the United States. When he seemed about to give up the quest, the dealer, after having learned that it was to be a "ready money" transaction, detained him and explained that he might be able to sell him if he would take 'Paris delivery," but that he could not sell them to a man in the United States. So it was arranged that the goods should be billed and delivered to the American's agents in Paris, who in this case were his bankers, and the deal was closed, and the scruples of the dealer against violating his contract with his agents were overcome.

An experience related by another buyer in the French market is that he went to a dealer to get a lot of parts and emphasized the fact that he wanted the latest things, as no others would be of any use to him. When he got the goods here he found, he says, that they were stock a couple of years old and useless to him.

Foreign Courses in Doubt.

What closely approaches a deadlock exists in regard to the course of the Bennett Cup race. In refusing to accept the Irish route the French Automobile Club betrayed its desire to have the race take place in France. The British club is equally desirous of running it in the United Kingdom, and neither organization is disposed to give way. The selection lies with the British club, but it must conform strictly to the rules unless the challenging clubs waives them. A decision must be reached by February.

Meanwhile preparations for the Paris-Madrid race grow apace. The announcement comes from Madrid that a decree has been signed authorizing the race on Spanish territory. French autoists are disposed to fear that in France the necessary authorization may not come easily, although there is no doubt it will be obtained in due time.

Railroad Rates to the Show.

With the exception of those of the New England and Pacific Coast States all the railroads have now granted reduced fares, viz., a rate of one and one-third, to the Good Roads Convention to be held at Chicago on February 14 to 21, during the automobile show. The Western Passenger Association and the Trunk Line Association last week followed the lead of the Central Passenger Association in granting special rates.

FEW MERCEDES CHANGES

Although not Shown at Paris That Famous Car Said to Embody Nothing new for 1903.

Since most of the French makers have copied the 1902 Mercedes for their 1903 models, the question of what the Mercedes people are doing for 1903 naturally has become a burning one. At the Paris show only 1902 models of the famous German car were shown, and so far as had been revealed no one knew what the Mercedes people might have "up the sleeve" for this year.

It certainly would have been amusing if after all the efforts at imitation of the "noiseless model." even to the square nosed front bonnet, honeycomb radiator and body lines, the makers of the pattern should have departed from that model and brought out for 1903 something entirely new that would prove itself to be still a year ahead of its imitators.

The Mercedes people are conservative, however, and not the sort that change for the sake of change, so there is nothing revolutionary about their model for 1903. From L. G. Herz, who until a couple of months ago was one of the employes of the Mercedes plant, something of what the German firm is doing has been learned. The new machines will have a four cylinder engine of 60 indicated horsepower, but capable of developing 70 on the brake. Their speed clutches will permit of a shift direct from the low to high, and there will be new features in connection with the sparking system and carburetter. The chassis is built lower and the radiator system is retained with the same style of front bonnet. The firm will build only racing cars, and will make about 400 of them, all of which have been contracted for. Last year the product of the factory, according to Herz, was 250 machines. Herz says that when he left the new speed clutches were not working properly, but that they would undoubtedly be perfected before the first car is delivered, which, he thought, would not be before April.

Openings in Brazil.

In Buenos Ayres a large number of rich traders and planters are eager to purchase motor vehicles at the first opportunity. A French traveller arrived a few months since with a number of cars and invited the President and other notables for a tour through the neighboring country. Each car found a purchaser; other would-be motorists had to be satisfied with placing orders, and these eagerly await the arrival of the vihicles. Several planters in the interior visit their ranches and plantations in automobiles, and all find them extremely satisfactory.

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Demonstrating the Dynamo.

A novel demonstration which is certain to prove interesting at the show, where it will be on exhibition at the spaces of Charles E. Miller, is now to be seen at Miller's wonderfully variegated showrooms at No. 97 Reade street. It is an optical exploitation of the difference in the spark furnished by a magneto and a dynamo. The demonstration is made very simply. A belt run by an electric motor is connected with both a magneto and an Apple dynamo, so that each is operated at exactly the same rate of speed in order to make a fair comparison, such as would be afforded by a car in operation. The illustration shows a much fatter spark to be given by the dynamo, of course, but the way this is shown is one that is more convincing than a volume of argument. The whole story is in a simple, "See for yourself."

Bidding for Show Visitors.

Nearly every man who travels knows "the Yates Syracuse."

It stands for all that a good hotel should be. There is an atmosphere of comfort and freedom about it that appeals—a sort of satisfying whole that makes the men away from home wish there were more hotels like it.

Therefore, it will be welcome news that there is added one more like it, and that in New York City, convenient to Madison Square Garden.

The Gregorian is the name, and it is located on Thirty-fifth street, between Fifth and Sixth avenues, and just off Broadway.

It is a handsome new structure, thoroughly modern and fireproof, and will be automobile headquarters for a large delegation during the New York show.

It is under the management of Averill & Gregory, of the Yates, and their promise to take care of autoists means much.

Accommodations can be reserved by writing the Gregorian in advance.

Many Uses of Gasolene.

Gasolene is not alone valuable for propelling an automobile. In a dozen other ways it is little short of indispensable to users of cars and their mecanicians, as well as in the repair shop.

It acts like magic in removing gummed oil from engine parts, such as valves, piston rings, etc. It is infinitely superior to kerosene for such purposes, as it leaves no deposit. As a rubber solvent it is equally efficacious. It comes out strong as a cleanser, removing grease stains from the hands in double quick time.

Scarritt will be Toastmaster.

A meeting of the entertainment committee of the N. A. A. M. was held on Monday evening to arrange details for the annual dinner, which is to be held at the Waldorf-Astoria on January 23. Winthrop E. Scarritt was agreed upon for toastmaster, and a partial list of speakers was agreed upon, as follows. F. S. Fish, John S. Wise, F. Smith and A. R. Shattuck.

Harkness Names Fournier and Vanderbilt.

"There's a lot of knack in driving a car, and especially a racing car, well," remarked H. S. Harkness to the Motor World man not long ago.

"But for skill of the first order there's nothing like that displayed by the man who makes speed changes while going at a fast clip. He has got to know instinctively or by intuition just when to make the shift. Most of us learn in time to do this pretty well, but there is always an infinitesimal period of time during which we hesitate before shoving the lever into place.

"There are two men, however, who rise superior to this weakness, this indecision. I refer to Henry Fournier and W. K. Vanderbilt, jr. With them the change from one speed to another is, or seems to be, a small matter, made with unconcern and decision and without the slightest hint of hesitation. As soon as the brain foresees the necessity for a change the hand makes it. It is never done bunglingly, either. Perhaps some day the rest of us will acquire this knack, but we haven't got it yet."

Club in the Crescent City.

A score of Crescent City automobilists met last week and organized the Automobile Club of New Orleans, the first distinctly Southern club in the country.

The election of officers resulted as follows: Albert Mackie, president; Theodore Grunewald, vice-president; Sam Stone, jr., secretary, and E. H. McFall, treasurer.

It was agreed that the meeting should select the chairman of the several standing committees, and that the president should name the members later, thus giving him an opportunity to perhaps name some who were not present. The following were chosen: Committee on laws and ordinances, Hewes T. Gurley, chairman; membership, Ginder Abbott, chairman; good roads, Charles U. Kennedy, chairman; runs and tours, C. S. Burt, chairman; racing, Palmer Abbott; house and clubrooms, A. J. Nelson, chairman. Board of governors to be composed of the chairmen of the several committees.

Three Napiers Will Defend Cup.

Several weeks ago comment was made in these columns on the severity of the requirements imposed upon British makers who contemplated competing for a place on the Bennett Cup team. The deposit of $2,500 was required as a preliminary.

It transpires that the criticism has been justified by the event. Although a number of British makers announced their intention of competing, none of them came to the scratch with the necessary deposit. Consequently a third Napier car has been added to the two already selected, and the British team will consist of these cars exclusively.

The German team will probably be made up of three Mercedes cars, while France will have two Panhards and a Mors. Only one of America's team, a Winton, has yet been decided upon.

What Surprises Shattuck.

"I have been surprised and considerably annoyed at the lack of interest in the Brownlow Good Roads bill, now before Congress, displayed by some of the automobile journals," said President Shattuck of the Automobile Club of America to the Motor World representative on Monday.

"They go on showing patent specifications and describing obsolete automobiles, but they have no space to devote to an important matter like this Brownlow bill," he went on with some heat. "From the technical press we expected something better than this.

"The importance of good roads to all users of the automobile cannot be exaggerated. For that reason every effort should be made to further the cause championed by the Brownlow bill. Every possible influence should be brought to bear to insure its passage."

Why the Mechanical Inlet?

There is one point about the mechanically operated inlet valve that is sometimes overlooked, in spite of the fact that it is very important and, indeed, one of the chief causes of the adoption of this feature. It is obvious that as the engine slows down the force of the suction will decrease, until it will sometimes be insufficient to open the valve, thus causing the engine to stop. With a cam opened valve, however, it makes no difference how slow the engine may be running. The valve is opened and the mixture sucked in, whether the speed be 100 or 1,200 revolutions. That crying need of the gasolene engine, flexibility, is thus obtained in some degree.

For Good Roads.

A bill has been prepared and will be introduced in the Pennsylvania legislature designed to bring about an improvement of the roads of that State.

The bill provides for the creation of a State Highway Commission, to consist of three persons, who shall be authorized to appoint a State highway engineer. These, working with the county commissioners, will attend to the construction of roads. The expense is to be divided equally between the State, county and township. The bill provides for a State appropriation of $6,000,000, $1,000,000 of which is to be used annually.

French Farmers Welcome the Speed Trials.

At the earnest request of the villagers the French officials have lifted the interdict placed on record breaking on the Dourdan road near Paris. Instead of being unwelcome visitors, the speeding automobilists are welcomed with open arms, and no one regretted their banishment more than the country people in the vicinity. This being so, they requested that the ban be raised, which was done. Now record breaking is permitted three days in the week.

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SPEED RATE COMPROMISE

Ask Aldermen to Legalize Eight Miles in City, Fifteen in Suburbs.

With unexpected celerity and without warning of any kind the entire aspect of the speed controversy in this city has been changed. The proposed amendment to the local ordinance increasing the rate from eight to ten miles an hour within the city limits will not be pushed before the Board of Aldermen. In its place an amendment will be offered keeping the eight mile limit in the greater part of the city, but permitting a speed of fifteen miles an hour in the northern suburbs of Manhattan and The Bronx and in the unbuiltup portions of the other boroughs. In this shape it is anticipated that the measure will go through with a hurrah.

The new regulations are embodied in the appended resolution, passed by a sub-committee of the so-called Committee of Fifty:

Whereas, The Automobile Club of America has submitted to this committee an amendment to the proposed ordinance relative to the speed of vehicles in the city of New York, the adoption of which amendment said club is prepared to advocate, provided this committee and the Committee of Fifty do not oppose the same; said amendment being in the following form:

Section 1. Speed of Vehicles: The following rates of speed through the streets of the city shall not be exceeded: That is, eight miles an hour by bicycles, tricycles, velocipedes, motor vehicles, however propelled, other than streetcars, or by passenger and pleasure vehicles drawn by horses or other animals, except that, in the Borough of Manhattan, on Broadway, north of One Hundred and Eighty-first street, on the Boulevard Lafayette and on Washington avenue, and in the boroughs of Brooklyn, Queens, Bronx and Richmond, upon streets where the buildings are at least one hundred feet apart, a speed of fifteen miles an hour may be maintained.

Sec. 2. No person riding, driving or in charge of any vehicle on any street, avenue, parkway or driveway in the city shall drive the same at any speed greater than is reasonable and proper, having regard to the traffic and use of the highways, or so as to endanger the life or limb of any person; and,

Whereas, This committee, after discussing the provisions of said amendment, has concluded that the adoption thereof and its inclusion in the proposed ordinance, will substantially accomplish the result to attain which the Committee of Fifty was formed, and will provide adequate and reasonable safeguards for passengers and vehicles in the congested streets of New York City; therefore,

Resolved, That this committee approves of said amendment and recommends to the full Committee of Fifty its approval thereof, to the end that said amendment may be adopted, and the object of said committee's work accomplished.

To a Motor World man Secretary Parker of the committee stated that at an informal meeting between Messrs. A. R. Shattuck and W. W. Niles, of the Automobile Club of America, and three members of the Committee of Fifty, held last week, the matter was talked over and the foregoing resolutions agreed upon.

"Under the terms of these resolutions," said he, "the Committee of Fifty obtains all it has fought for. It is perfectly satisfied, having achieved the object which led to its formation. We shall probably retire, now that this has been accomplished."

President Shattuck was then sought, and asked if the Automobile Club's attitude was correctly stated.

"Yes, we have agreed not to press the ten-mile an hour amendment," he said. "We thought the matter over very carefully, and came to the conclusion that such a compromise as has been reached was the wisest course. It was doubtful whether we could have won our fight on the original lines, and it seemed to us that it was better to secure a fifteen-mile rate in the suburbs than to stand or fall by ten miles everywhere.

"As it is, we get a fifteen-mile rate on upper Broadway, Lafayette Boulevard, the Hoffman Boulevard and other frequented roads. This more than offsets, it seems to me, the failure to obtain a ten-mile rate in the city proper."

No little surprise has been caused by the sudden right about face. As was stated in these columns a few weeks ago, there was every reason to believe that the 10-mile amendment would be adopted finally. Alderman Joseph Oatman took this view of the matter on Monday, when he said to the Motor World man:

"There was a very good chance of putting the amendment through as it stood. Now that the Committee of Fifty has withdrawn its oppposition, and an agreement has been reached by all concerned, there is not the slightest doubt of the passage of this latest amendment."

Correct Your Records Accordingly.

Fresh investigation having shown the following records to be the best in their respective classes, they are given in place of those contained in the table which appeared in the Motor World December 4. In the steam car class, competition, the records for one to three miles, inclusive, stand in the name of W. C. Buckman. At Detroit, Mich., on October 25, 1902, he won a three-mile race, his time for the distance being 1:34, 2:51 and 4:07 2-5, respectively. This supplants the one-mile time of Griffin, made in 1900. The electric care time, competition for five miles, belongs to A. L. Riker, who covered the distance in 8:47 4-5, at Brookline, Mass., on June 15, 1901. The ten-mile record credited to Rollin White, in the gasolene class, under 1,000 pounds, is an error.

KIMBALL COMES BACK

Returns From Paris With a Fund of Interesting Views of Foreign Cars and Affairs.

Among those who have recently returned from European trips with interesting views about what is being done abroad, is E. T. Kimball, of the Central Automobile Company, 1684 Broadway, New York. He arrived on the Philadelphia last week, with his wholesome countenance denoting excellent health and spirits.

Concerning the situation in France at show time, Mr. Kimball says that it was a poor time to do business, and that he never would go over for that purpose again at show time. They were all "up in the air," inflated with highly inflammable gas, which was the product of their notions as to the importance of the French industry and the demand that all the world was going to make upon it. Their ideas were altogether too large to admit of practical business deals, thought Mr. Kimball. He says getting an exclusive agency at this time is out of the question, but he did close a contract for Mors and Renault cars, which his company will handle this year in addition to the Peugeot. The Mors cars he expects to have here ready for delivery in March, but two models will be on hand for the New York show. These will be an eleven horse power car complete and the chassis of an eighteen horse power, which are the new types of Mors this year.

With regard to the exhibits at the show, Mr. Kimball expressed some interesting opinions on the cars. The Mercedes, he declares, is a superb car, developed to the utmost point of serviceability for a thoroughbred automobilist. It is hardly the car though for the ordinary man who is not expert, because it has been developed beyond the stage of simplicity, and there is a great deal that must be looked after to keep it in perfect order. The Mors, he thought, presented a better proposition for the average man. It combines high efficiency with simplicity, and is best calculated to give all around satisfaction. The Panhard, in his opinion, seemed to be rather at a standstill. It showed fewer improvements than others and no advance in individuality. The Renault is taking a stronger hold than ever on the public and is bound to sell well. The new models are thoroughly developed, splendidly finished and furnished in enough variety of styles, one, two and four cylinders, to satisfy any demand. The Renault factory is being enlarged, so as to increase the capacity from 900 to 1,200 machines. The Mors output, according to Mr. Kimball, is about 250 or 300, and the Panhard about 600.

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COCKS'S VALEDICTORY

The Defeated Senator Sounds a Parting Blast in Defense of His Infamous Law.

In a long article in a Brooklyn daily, Senator Cocks, the Nassau County (L. I.) legislator, from whose fecund brain issued the malodorous anti-speed law bearing his name, undertakes a defense of himself and his bill. The defense come at an appropriate time. The Senator's career at Albany is ended, he having failed of re-election in November. Hence these regrets.

Digressing for the purpose of urging that something more than a speed limit is necessary to curb automobiles, which are asserted to be "heavy machines of high power capable of developing a speed of fifty or sixty miles"—presumably in one hour—the Long Island sage goes on to say:

"The law regulating the speed of automobiles on highways is a matter of great interest, and has caused considerable discussion since its enactment, and especially since the more rigid enforcement of the law during the past few months.

"From the observation of the driving of automobiles upon our roads during the past season, a great improvement has been noticed in many ways. Whilst occasionally we see a machine going at a very rapid rate, the majority of them do not much exceed the speed limit. Almost all drivers are more considerate than formerly; they blow the horn less frequently, which was always a source of great annoyance, as it indicated by the manner in which it was blown and the frequency of the blasts that the driver of the automobile expected you to give him a free passage on the middle of the road, whereas, as a matter of fact, he had no more right to the highway than the person moving slowly in the vehicle, and one blast, or possibly two, would have been sufficient to warn the person that an automobile was approaching and he would then be compelled by courtesy and by law to give him a portion of the road.

"The first bill passed by the Legislature regulating the use of automobiles on our highways was a very ineffective law, as a violation thereof was not made a criminal offense, hence the only way or prosecuting a violator was by a civil suit.

"In urging the passage of that first law, the automobile people represented that if a speed limit was established by law, the drivers of automobiles, being gentlemen, would respect it, and that in their judgment such a bill as that would be effective. Experience has taught, however, that it is necessary to have a law, the penalty for the violation of which can be readily inflicted, as most of the automobilists failed to respect the provision relative to speed, until it was made a misdemeanor to exceed it.

"All those who have sought to regulate the use of the automobile have realized that it is here to stay, and most of them have no desire to interfere with its proper use, but only expect to so regulate their use upon the highways that they shall not be a menace to the safety of those who travel upon them.

"As to the enforcement of this law on Long Island since it has been taken up actively by the District Attorney and by the various village corporations, it has been sometimes claimed by the automobile owners when arrested, that they were persecuted, and made many excuses which seemed to the average citizen to be ridiculous, but it must be remembered that there had to be some fixed standard beyond which it would be illegal to run the machine, and if a man had exceeded the speed limit by only a few seconds per mile, he, nevertheless, was a violator of the law and therefore subject to arrest. A great majority of the citizens think that the fines imposed by the Justices are utterly inadequate, some having been fined less for the second and third offense than the first, whereas, after the first offense they can be punished by imprisonment at the option of the Justice.

"The difficulty in drafting a law to regulate the use of automobiles on highways will be appreciated by one, only when he begins to draft such a measure. Last winter there was a great many suggestions offered, but it was desired to have as simple a law as possible, so that it could be readily enforced. The automobile people proposed that a different speed might be allowed in certain portions of the country, but after careful deliberation it seemed impossible to draft a law making these provisions without vitiating the whole. Whilst there may be places where it would be safe to run automobiles at a greater speed than twenty miles, it is difficult to incorporate that into law so that it can be enforced without great difficulty. It seems to the average man that twenty miles an hour is a reasonable fast rate to travel over roads which horses and pedestrians use, and that it should be a sufficient speed for all practical purposes. If the automobile people desire a place for speeding, they should build a speedway for that purpose.

"The various accidents that have happened since the passage of this act have justified all claims made by the friends of the measure. Such accidents as the Fair tragedy in France, the one at Yonkers, and countless others, have demonstrated that great care should be given to running the automobiles on highways.

"As to what should be the proper thing to do when automobile meets automobile, we are not discussing now, but it seems to the average driver of the horse that to run those rapidly moving machines past each other as closely as they try to pass a team, would be reckless to say the least.

"The drivers of automobiles must remember that much of the ill feeling that is manifested from time to time is due almost entirely to the utter disregard of the rights of others shown by some of the automobilists, and consequently all have to suffer for the selfishness and discourtesy of the few."

MUST BE DIVIDED

Patent Office Promulgates a Ruling Relating how Motor Vehicles are Dealt With.

In an important decision just handed down by the Commissioner of Patents it is held that a division is "required between claims covering a motor vehicle and claims covering the steam power apparatus for use in a motor vehicle."

The case hinges on the application of Andred H. Tyson, filed May 7, 1902, No. 106,336. On July 30, 1902, the examiner made several minor criticisms of the specifications and the claims, and then said:

"The case covers several distinct and independent inventions, one of which, motor vehicles, is classed in another division of the office.

"Claims 1, 7, 10, 11, 12, 16 and 17 are to a condenser; claims 2, 3, 4, 5, 6, 8, 9 15 and 18 are to a feeder; claims 13 14, 19, 20, 21 and 22 are to a motor vehicle. Division is required to be made before action on the merits."

The applicant appealed from this ruling, and petitioned that it be overruled. It was finally held by the Commissioner, after much argument and legal warfare, that "the examiner is right in his requirement of division between claims, 13, 14, 19, 20, 21 and 22, which cover a motor vehicle construction, and the remaining claims in this case, which do not relate in any way to the construction of a motor vehicle. Motor vehicles are recognized by inventors and manufacturers as a distinct subject matter of invention and sale from the specific engine, boiler or condenser mechanism which may be used in such motor vehicles. This independence of invention has also been recognized by this office in its scheme of classification.

"With regard to the other two groups of claims the examiner is in error in requiring division. These two groups of claims are held by the examiner to cover, respectively, a condenser and a feeder. An examination of these claims discloses the fact that none of them is limited to a specific construction of condenser or a specific construction of feeder. All the claims, with the exception of those held to cover a motor vehicle construction, are drawn to cover combinations and sub-combinations of a general steam power apparatus, and division should only be insisted upon between claims 13, 14, 19 to 22, inclusive, and the remaining claims in the application.

"The petition is granted to the extent indicated."

When Steamers Stand Still.

If users of steam cars ever notice their water gauge at a standstill while under steam they should without delay try the lower check valve to see that it has not become seated. These check valves have above them a small hand wheel, the screwing down of which releases the valve. It is possible for this to happen, and the boiler tubes to get burned in consequence.

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Short Circuits

There is an import duty of 30 per cent on cars brought into New Zealand.

There is talk of holding a hill climbing contest at Boston in the spring.

Among the purchasers of Oldsmobiles in this city last week was Harold S. Vanderbilt.

"The Transportation Problem" will be the subject of the evening at a dinner to be given by the City Club on January 12.

Mayor Ashbridge promptly affixed his signature to the ordinance regulating automobile traffic in Philadelphia, and it became a law last week.

Boston autoists are indulging in talk of a local show. Many tradespeople are said to favor one, but no active steps have yet been taken in the matter.

On January 1st E. A. Archibald, the founder of the Archibald Wheel Co., of Lawrence, Mass., retired from the company, which will be continued under the same name.

Members of the Springfield, Mass., Automobile Club will attend the Madison Square Garden show in a body. They will leave Springfield on Tuesday morning, January 20th, for this city.

The thorough good feeling that exists between the Haynes-Apperson Co. and its employes was shown just before Christmas when the latter presented President Edward Haynes a handsome chair.

Direct from W. K. Vanderbilt, jr., himself comes confirmation of the fact that he has entered for the races of the French Automobile Club this summer, and that he will tool a Mors racer in them.

Following are the latest additions made to the membership of the Automobile Club of America: Active, George F. Baker, jr., H. S. Elliott and Henry S. Kerr; associate, Edward H. Butler and C. W. Matheson.

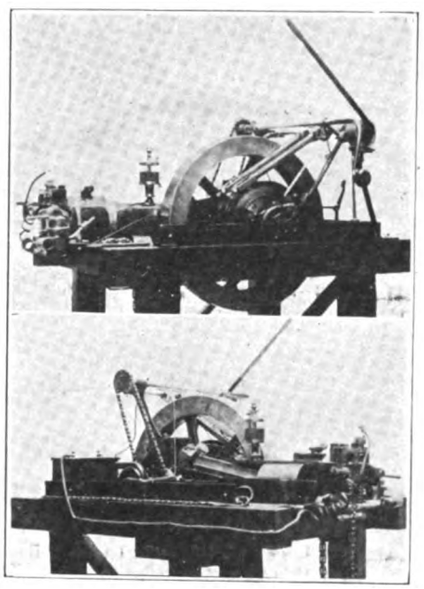
Representative L. H. Johnson, of Minneapolis, Minn., is preparing a bill for presentation to the legislature of that State regulating the speed of automobiles in the country districts. Undue speeding is alleged to be the cause

Few people, even autoists, stop to think that very often the bad odor that accompanies gasolene cars really comes from burned or overheated lubricant. Such is undoubtedly the case, and it increases the difficulty of coping with the matter.

When a man reaches the "what's the use" stage his case is pretty nearly hopeless. Automobiling, at least, has no place for him.

Showing Just how it Works.

A new window display that began immediately to attract was set up a few days ago in the Oldsmobile store at No. 138 West Thirty-eighth street, presided over by R. M. Owen. It was a new model of the Olds runabout, spick and span from the factory. While the changes in this latest output of the concern that waits for no date, but "improves as it goes," are of a character that



are not apparent on the exterior, the improvement in the general finish is noticeable at once. It is a handsomer vehicle throughout than the preceding machines. A new carburetter has been adopted, and a modification of the explosion chamber introduced. Heavier axles are employed, and they have been reinforced by trusses. Steel sprockets have been put on, and wooden artillery wheels have been adopted as the regular equipment, in place of wire ones; the horsepower has been increased one unit from four to five, and the body and seat widened slightly.

He would take no pleasure in locating the seat of trouble, than which task there is nothing more pleasant—when success crowns his efforts.

Westward, the star of progress and automobile sense still makes its way, while the effete East is tied to the traditions of its aldermanic forefathers. Out in Carrie Nation's land, the city of Topeka has a speed ordinance permitting sixteen miles an hour, except in certain busy streets, where it is limited to eight miles.

The patient telegraph operator has had to bear the blame for many slips in some of the marvellous pronouncements on the Paris show that have been appearing in the daily papers, while the intelligent translator has not gone scathless. One journal speaks of the "production of a comfortable, well-balanced and noiseless frame" as one of the triumphs of the exhibition.

A second defeat has been encountered by Harry S. Woodworth, of Rochester, N. Y., who was arrested and convicted last May charged with illegal speeding. The Appellate Division of the Supreme Court last week handed down a decision affirming the conviction. In spite of this it is probable that Mr. Woodworth will carry the case to the Court of Appeals.

As the Governor of North Carolina said to the Governor of South Carolina, it's a long time between—the reports of the Lehwiss globe girdling expedition. It is now well nigh a year since the doughty doctor and his companions started on their long journey, and they were last heard of at Moscow several months ago. Evidently the path of the automobile in the roadless countries is not a pleasant one.

From Paris comes the story of a combination automobile and flying machine that is to astonish beholders. Arthur Ware, of New York, an architect and engineer, is the inventor. Ware keeps the details of his invention a close secret, and declares that he can rise easily from the ground and surmount obstacles without difficulty. He promises to make a trial of his invention in the Bois de Boulogne soon.

On her way from the steamship wharf to her hotel last week Mrs. Langtry was the victim of an accident, her cab being struck by a street car. Upon being extricated from her unpleasant predicament the "Jersey Lily" bewailed the fact that she had not been in her pet automobile. "Elizabeth would have got out of the way," she said. "She is so named because she is strong minded and dependible, and not addicted to escapades."

"We might as well try to keep out the Atlantic with mops as try to stop this use of high speed cars. In dealing with this question we have to consider not only what is taking place now, but what will go on in five or six years. Already the horse is being superseded. He was master of the situation for many years, and the progress of mechanical locomotion on our roads was stopped out of deference to his whims and his fears. Nowadays he takes no notice of motor cars," says English Engineering.

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MORE FRENCH FEATURES.

(Continued from page 444.)

De Dion & Bouton are placing on the market a cheap one-cylinder car called "la Populaire," and one of these little cars, driven by Cormier, has just completed the round tour of all the principal capitals of Europe. The motor is a 6 h.p., placed vertically in front on the car. There are three speeds and reverse in the gear box, placed near the back axle, which is double. In addition to the fixed axle, there is a double live axle driving into internal crowns on the back wheels. This little car is sold to the public for 3,900 francs.

There were several combined electric and petrol cars in the exhibition, but the most remarkable of these is the one presented by Krieger & Co., who claim that they have succeeded in turning out a completely successful vehicle, under a patent taken out by Monsieur Krieger, who himself explained to me the principle of his patent. The difficulty with the "volture mixte," as the combined petrolectric car is called over here, has always been the question of hill climbing, for on a steep incline the absence of a low gear made the conditions of the motor the worst possible. By means of an ingenious method of compound winding, M. Krieger varies automatically the current supplied by the dynamo, which is coupled, in place of a fly wheel, to the motor, so as to give a high voltage and a low current, or a big current and a low voltage, the motor turning always at its maximum speed and utilizing its power to the best advantage, according to the gradient of the road. The car may even be stopped by jamming on the brakes, and the motor will still continue to turn, without injuring either the dynamo or the electric motors, of which there are two, one by the side of each front wheel.

Amongst those who have followed most closely on the heels of the Cannstadt Daimler Co. is the firm of Cottereau & Co., of Dijon, who exhibit a car with a four-cylinder motor giving 16 h.p.. This car is very compact, and has mechanically operated inlet valves placed on opposite sides of the cylinders to the exhaust valves. The regulator is a throttle valve on the inlet, and the ignition is by the rupture of a magneto current in the cylinder. A very excellent method of advancing the ignition is provided with this motor with a spring dash pot, which takes the blow of the rupture lever should there be a back fire. The frame is of stamped steel, and the transmission is by chains, working through a change of speed box containing four speeds and reverse, the fourth speed being direct and without any intermediate gears. Messrs. Cottereau will bring out in February next a new model one-cylinder, two-seated car weighing only 350 kilos. The motor will give 6½ h.p., and will have a mechanically operated inlet valve and all the improvements of the larger motor.

Wise in the Game.

It might have been the heat in the cafe from which they emerged that made their faces florid, or it might have been the cold. They wore big automobile caps and fur-trimmed coats, and there was a suggestion in their speech that their tongues, too, were trimmed with fur. It was plain that they had been out on the road and had experiences, for a chauffeur in attendance was carrying a broken chain.

A fakir on the sidewalk of Forty-second street was selling mechanical toys, chief among them being tin automobiles, with the wheels set so that the toys would run in a circle on the pavement. The stout one on his arm and ejaculated:

"Huh! There, that'sh the kind of machine y'oughter have. Thats'h just 'bout whatcher could run. Huh?"

"Betcher that you couldn't runev'n one—them!" retorted the other.

Just then, one of the toys ran a wheel in the crack between the flagstones and overturned.

"Sh's 'ti'tched!" exclaimed the bigger one. "There, there'sh way yo'd runnit. Say, there, young fel, yo'd better picker upper th'won't be nuffer gaslene lef' to termaker highbol."

"Say," said the slighter man, "tell yer Bob, get one an' I'll race yer on the poo' table. Go me?"

They proceeded to buy them each one of the toys, and while the big man was coaxingly laboring with the fakir to pick him out the record holding machine, his companion took out a knife, and after cutting away the little leaden chauffeur, he proceeded to cut off the top and tonneau and sides. Finally they started back for the hotel they had left, the slighter man carrying his little machine "stripped to the engine and wheels," the engine being a few clock wheels and spring. Their chauffeur walked behind with the grins of several bystanders reflected on his own face.

Living Down Prejudice.

Even to-day, in spite of the convincing demonstrations of its thorough practicability that have been made, the automobile is on trial as far as the general public is concerned. There has been so much emphasis laid on its ability to go wrong at any and every stage of its existence that many people have come to believe that a state of trouble is its normal one. The proofs of its reliability are received with surprise, sometimes with incredulity. Of course, all this will eventually disappear. A considerable section of the people know better than this now, and their number is being rapidly augmented. But the process must necessarily be a slow one. Prejudice is difficult to live down, and there will be no exception in the case of automobiles. Time and the improvement of the cars will accomplish wonders, however.

Bowman Takes on Panhards.

Sidney B. Bowman, of No. 52 West Forty-third street, New York, is back from Europe with a contract for a dozen Panhards in his pocket and the smiling assurance that he is in a position to fill orders for any and all sorts of French automobiles. The Panhard, though, is the one he will stake his money on, because in his opinion it is the "old reliable" model that has been found ever trusty and true. He says that they are still the standard machine in Europe, and that you see more of them than any other breed. Incidentally, Bowman intends to have the agency of a good American car—but s-sh! you can't tell what it will be until the time of the show.

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SCHOOL FOR MOTORING

British Institution that Turns Out Full Fledged Autoists in Eight Lessons.

Of course, every dealer makes a practice of teaching customers to drive a car. But the desire frequently exists to take lessons before making a purchase, or even before deciding to buy a car at all. Such a desire is one almost impossible of gratification.

It has remained for a Liverpool (England) man to open a "School of Motoring." It has been in existence only a few months, but marked success has attended it.

The striking thing about the course of teaching pursued is its brevity. It will be something new to the non-motoring public to learn that they can pick up in a week—to be precise, eight lessons of about an hour and a half each—sufficient knowledge of the motor and its working to face the roads on their own account. In this brief course, the proprietor of the school, Ford by name, does not pretend to tell all that is to be known, but he gives a sufficient grounding in the subject to permit any intelligent pupil to deal with and manage his own car.

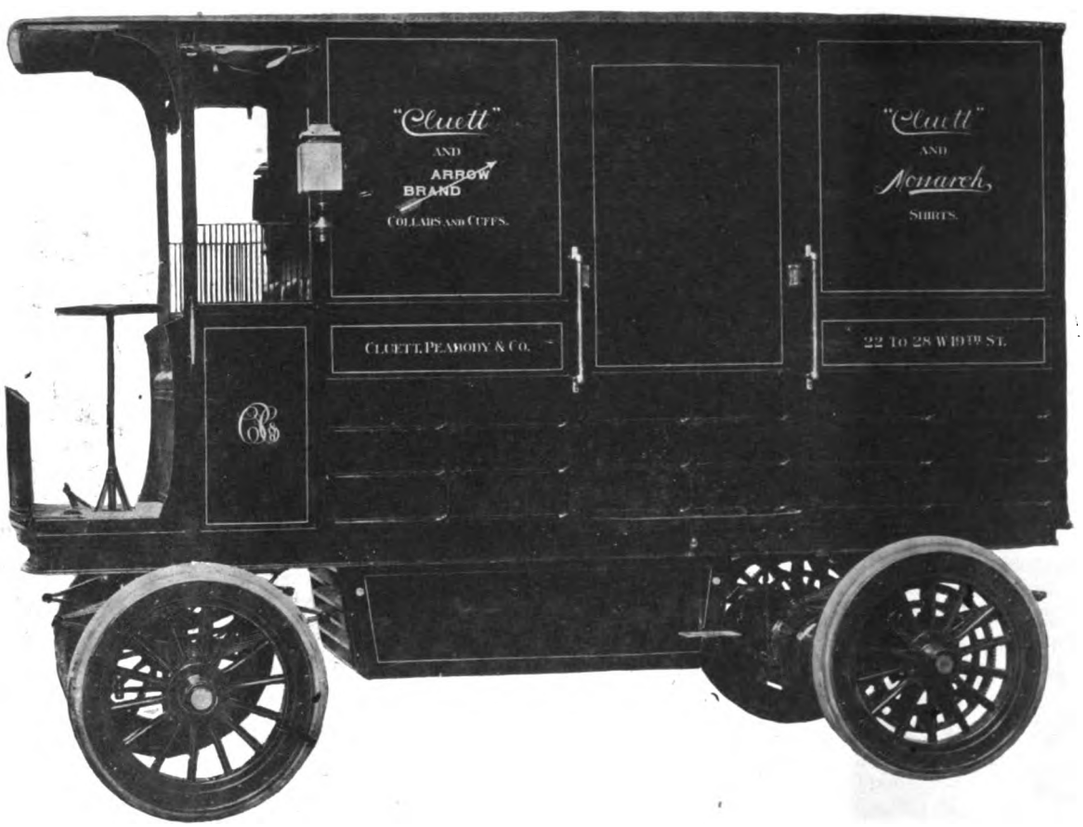
For the purpose of tuition Ford, in the early part of the course, employs a Benz car, which, as he says, combines many of the principles of other machines, and in the later stages he uses a 9 h.p. Darracq, which, he considers, has a similar advantage.

The first lesson is, of course, confined to to the general principles of the motor and the machinery. In the second lesson, it generally happens that a good deal of recapitulation takes place, and, besides that, transmission is taught. In the third lesson, the learner is allowed to drive the Benz car at second speed, which is slowly increased to about top speed. The fourth lesson introduces the pupil to top speed and curves. The latter are brought on gradually. They are, at first, easy, but before the lesson is done, the driver is confronted with some very sharp corners, which he is encouraged to negotiate on his own account. The fifth lesson is devoted to grounding the learner still further in the knack of dealing with the difficulties of the road, which he has now to take at increased speed.

In the sixth lesson, the pupil is brought among moderate traffic at second speed, and, in the seventh, he is again taken into traffic at rather increased speed. The eighth, and final, lesson of the course is a journey into town, through the busy streets, and the man who can face that is, comparatively speaking, full-fledged.

Asked if he had had any accidents, Ford's reply was in the negative. The care that is exercised is such as to prevent any untoward occurrence, and it may be said that before the pupil is brought into town traffic in the final lesson, he must show that he possesses sufficient confidence and nerve to face it without risk. One of the advantages, indeed, of such a course of instruction is to inculcate confidence.

The pupils come from all parts of the country, which is some indication of the fact that there was room for such a school as he has started. For teaching ladies, it should be added, there is a covered enclosure.



ONE OF NEW YORK'S SHOWY ELECTRIC WAGONS.

Ray's Anti-Rattlers.

The Ray Automatic Machine Co., Cleveland, Ohio, have undertaken the manufacture of a number of metal automobile parts, such as mud guards, bonnets, mufflers, tanks and radiators. The concern is well equipped for the business, and Mr. Ray, who is in charge of the department, is thoroughly conversant with the requirements of the trade, having been identified with their manufacture for several years.

The Ray specialties contain a number of patented improvements, among them being a fastener for the mud guard, which does away with the rattle, so annoying on most guards, and a similar lock on the hood.

The company is in a position to build any design wanted, not being confined to any particular pattern.

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Threatens to Loop the Loop.

Since "Barney" Oldfield made such a meteoric debut in the automobile racing game last fall Detroiters think no deed too difficult or daring for him to tackle and accomplish. Now it is proposed to have him make his next spectacular entry in the role of a "loop-the-looper"—in an automobile, of course. To "Tom" Cooper, in whose car Oldfield raced, belongs the credit of proposing the feat.

"I don't see why it cannot be done," he is quoted as saying. "The greatest problem would be the construction of a loop strong enough to carry the ton of machine around without collapsing. It don't see why we can't make all our experiments without anybody in the machine, setting the steering gear solid so that the machine will not deviate from the course, and providing an automatic shut off that will stop it after the loop has been made. After we get everything ready the rider can be strapped in and the whole business let go.

"Maybe I won't have the nerve to do it, but if I don't 'Barney' will, and we ought to be the greatest attraction in loop-the-looping that ever came down the pike.

"The St. Louis Exposition is coming," Cooper continued, "and we could have a loop built there that would be plenty solid enough, if it has to be constructed of masonry and steel. The '999' is the fastest machine in the world, and it will certainly be an attraction alone. When you add the sensational performance of the loop it ought to be the greatest money coiner that ever happened."

How the Man Dodges.

"Did you ever watch a man dodge an automobile? If not it is an interesting study," remarked a man who observes things.

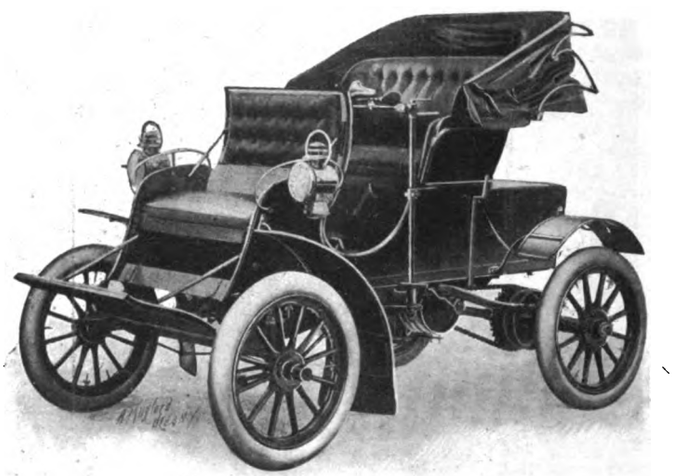
"The average citizen will uncomplainingly step out of the way of a trolley car that grazes his coat tails and gaze admiringly at the pair of thoroughbreds which nearly run him down. He will even smile when he is bumped into by one of those fiends who persist in pushing a bicycle on the sidewalk. Man takes glee in running across the railroad track in front of a fast train and then turning around with a pleased smile and lingering to watch the flying engine and cars. But just let the chauffeur make his unearthly whistle croak and watch the face of the citizen.

"He will dance up and down and say things that would cause an application of the blue pencil right here were they inserted. He will glare at the driver of the automobile and make remarks derogatory to the social status of his ancestors back to the dawn of creation. Just why this condition exists is hard to tell, but the man with the disposition of a friendly puppy becomes a glowering demon of hate whenever he has to get out of the way of an auto."

Newness in the Knox.

Wood wheels, a lengthened wheel base, a more powerful engine and a general increase in strength mark the 1903 Knox gasolene car, samples of which are now being shipped to agents.

The Knox air cooled engine has been retained and improved in detail. The number of cooling pins in the cylinder has been increased, together with the size and speed of the fan. The engine stroke has been increased one inch, making it, it is claimed, the largest and most powerful successful air cooled engine in the world. The folding front seat of the body has been made wider, deeper and much more comfortable in every way, and will easily seat two grown persons. Brass arm rails have been added to the sides. The finish and trimming of the body has been improved, and an option of two colors of paint will be given—dark red with brack arimmings and gold stripe, or dark Brewster green with black trimmings and gold stripe.



The wheel base has been lengthened to six feet. Wood wheels and 30x3½ inch double tube tires are now used. Extra large improved roller bearings have replaced the ball bearings on the running gear, and all the plain bearings on the engine and transmission have been made much larger and bushed with the best anti-friction metal. All bright metal parts, including the lamps, are finished in polished brass instead of being nickel plated. The emergency hand brake has been increased in size and is much more effective.

The oiling system has been much simplified and made much more convenient. A chain, with a guaranteed breaking strength of 10,000 pounds is now used, and it may be easily adjusted by turning a nut on the rear end of the springs. A triple expansion muffler is used, giving a quiet exhaust with no back pressure. The high speed clutch has been greatly improved and is now located inside the transmission casing, protected from all dust and mud. It may be quickly and easily adjusted from the side of the car, and gives any degree of friction with slight pressure on the clutch lever.

The starting of the engine has been made much easier and more positive by an improvement in the priming device. Both the front and rear axles and all other parts of the car subject to strains have been made much stronger and more durable, and the weight is now 1,600 pounds complete. The price has been increased from $1,100 to $1,200.

A Small but Important Feature.

"Ever since I had a narrow escape from a serious fall from the rear seat of a toman car, through the door opening unexpectedly, I have been nervous about the fastenings of such doors," confided an autoist to The Motor World man recently.

"Consequently, I make it a practice to notice how cars are fitted in this respect. It has become almost a second nature for me to glance at the door.

"As a rule there is a locking device provided. In my case, the door had only the spring catch, and it having been only partially closed, not caught, my weight against it, after I had settled myself comfortably, forced it open and precipitated me through the opening. Fortunately we were not going fast, and I came down on my feet.

"It is a wonder that serious accidents have not happened in the past, however. Insufficient means of securing the door or carelessness in closing it might each cause such an accident. But with both a spring latch and a lock of some sort, the danger is practically eliminated."

Have Booked at Chicago.

In addition to these already noted, the following concerns have taken space at the Chicago Automobile Show, which opens on February 14:

Motsinger Device Mfg. Co., Fournier-Searchmont Automobile Co., Wagner Cycle Co., Crompton Motor Vehicle Co., Pope-Robinson Co., Speedwell Automobile Co., J. B. McGanna Co., and the Fischer Automobile Co.

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HALL HAS A WONDER!

"Six Cylinders on an Oscillating Disc" That Plays hob, he says, With Existing Motors.

If one-quarter of the claims made for a gasolene engine, for automobiles and launches invented by F. E. Hall, of Portland, Me., are borne out by its performance, Hall has a fortune within his grasp, and the world will be even more enriched than he. Unfortunately, claims rather than facts, are all that have yet been given forth.

The engine, it is claimed, "secures six times the power given by the ordinary type, with no increase of friction and a smaller consumption of fuel.

"It is composed of six cylinders operating on one oscillating disc which turns the shaft, everything being inclosed in one large cylinder so that when the engine is mounted there are only the upper semicircle of the casing and the lever which starts and stops it, in sight. There are no valves, no packing of any description, no balance wheel, no noise, and the engine can be run at any speed from twenty-five to a thousand revolutions, and can be reversed at full speed with a single lever. The muffler is inside the large cylinder.

"The 20 horsepower engine weighs only 350 pounds, is 28 inches long and 15 inches in diameter. The engine of five horspower is about the size of a large coffee pot.

"My business," Hall is quoted as saying, "led me to frequently use an automobile, for which, of course, some sort of a handy engine had to be found. Not satisfied with those on the market I began work on one of my own, and this is the result. It has been tried under nearly all conditions. It is noiseless, odorless, does not vibrate and requires practically no room. It will run in any position, or under water."

The Group in the Fifties.

A new clustering of automobile establishments has begun in and about the blocks between Fiftieth and Fifty-fourth streets, Sixth avenue and Broadway. The Central Automobile & Storage Co., with its big place at No. 1,684 Broadway, reaching through to Seventh avenue, were the pioneers in the neighborhood, but they have several neighbors now, and a few more are promised whose size and importance are sufficient to give the locality quite a character as an automobile centre.

Already the Central concern has for neighbors Alex Fischer, in Fiftieth street; the Knickerbocker Automobile Station, in Fifty-first street, and the newly launched concern of Fickling & Fulton, in Fifty-fourth street. Two big newcomers have engaged sites close by. These are the Mobile Co. of America, which will have its New York headquarters at the corner of Seventh ave. and Fifty-fourth street, and the Rainier Co., which has begun the erection of a new building at the corner of Fiftieth street and Broadway.

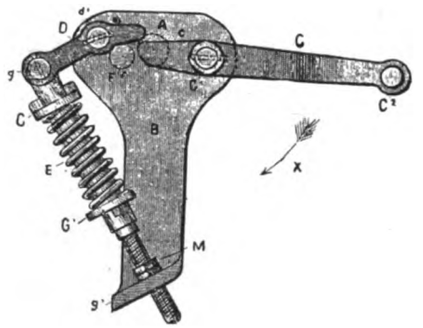
To Prevent Crank-Kicking.

Cases are on record of autoists who have suffered broken bones from the "kick" of a starting crank, resulting from back firing at an unexpected moment. Such occurrences are annoying, even when not attended with such serious results.

To obviate them there was exhibited at the Paris show just closed a starting handle which automatically disengages itself at the slightest attempt of the motor to back fire, and so prevent these unpleasant and inconvenient experiences.

It is known as the "Anti-Shock," and, devised by an engineer named M. Duchene, has just been put on the market.

It consists of a plate B, which is to be keyed at A on a shaft of the engine. The handle is pivoted on the plate C, as is also at d1, the



short lever D, the end of which bears, owing to the action of the spring E, against a stop F, and lightly on the end of the lever C. The spring E is so mounted that the effort necessary to compress it is slightly above the degree of compression of the explosive mixture in the combustion chamber of the motor.

The operation is as follows: To start the motor, turn the handle in the direction shown by the arrow; if all goes well, the whole device will turn as one piece; if, however, there is any tendency to premature explosion, the force of the back fire is taken up by the spring E, which, becoming compressed, causes the lever Dd to be lifted off from the end of the starting handle proper, the latter thus becoming quite free and independent, and receiving no shock whatever.

To put the handle in position for a fresh attempt to start the motor, it is only necessary to give it one complete turn. The "Anti-Shock" starting handle costs about $10; it is made in two sizes, one for motors under 8-h. p. and one for engines over that power. The device can be fitted to any engine.

Serpollet Steamer Here.

A new Serpollet touring car arrived from France a few days ago for the use of L. C. Weir, of the Adams Express Co., who keeps it at the Barry & Hayes garage, at No. 33 East Fifty-eighth street.

WHITNEY ON CHAINS

How he Came to Adopt his Standards and Their Value to the Trade.

An ardent advocate of the adoption of a standard of driving chains for automobiles is President Clarence E. Whitney of the Whitney Mfg. Co., Hartford, Conn., who has just returned from a most successful trip throughout the Middle and Western States. A large number of concerns have adopted the Whitney chain, influenced by its unusual merits.

More than a year ago the Whitney company took up with automobile makers the matter of standardizing chains, the idea being to establish standards before the industry had entered upon its period of rapid growth.

To a Motor World representative Mr. Whitney traced the course taken by his company.

"There should be a universal standard for roller chains," he said. "We did not try to force our standards on the market, but as long ago as November, 1901, before roller chains were used in quantities, drawings of the Whitney standards were submitted to automobile manufacturers, and a strong appeal was made for ideas, criticisms and cooperation in determining the best dimensions for rolls, bushings and rivets.

"Many automobile experts and engineers have indorsed the Whitney standards; others have refused to go on record with an opinion, but up to date no one has criticised them, with the possible exception of chain manufacturers offering other standards.

"At present a number of chain builders are making the Whitney standards, and it is hoped that all automobile manufacturers will give this important question serious attention.

"We claim for our roller chain standards the best proportions; the largest rivets, which give more bearing surface, lessen elongation and give greatest strength (material being equal); larger and thicker rolls that can be well hardened without springing, and will stand abuse without cracking, and will revolve better than smaller or thinner rolls and thereby wear the sprocket teeth much less; the bushings sufficiently thick to harden perfectly without springing.

"Lastly, and a very important matter, single roller chains of all standards will run on sprockets cut for Whitney standard chains in case of an emergency. This is not the case if sprockets are cut for other standards."

The Whitney chains are made in sizes from ¾-inch to 1½-inch pitch, and 5-16-inch to ¾-inch widths.

The Smith & Mortenson Co. will remove from West Thirty-eighth street to No. 142 West Thirty-ninth street, this city.

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As to Motor Houses.

In building a motor house it should always be remembered that the floor ought to slope either inward toward a central drain or to one side, so that in case of any leak the gasolene will run off and not get collected in any quantity under the car. But in addition to this, extra security may be obtained if desired by having two or three buckets of wet sand in the corner of the shed—wet sand is by far the best extinguisher for any kind of oil or spirit fire. This is always worth while to remember.

Sawdust is also not a bad cover for the floor, but it is slightly more inflammable. Either sand or sawdust helps to absorb any oil which may drop out of the bearings. This applies to a car in which oil and not grease is used.

For roller bearings, and even for plain bearings, oil is preferable to grease, and there is no doubt of its superiority in the case of those motor cars which are called upon to do the hardest and fastest work.

Brakes That are Too Effective.

There is such a thing as having brakes that are too effective—or, at least, of making too sudden application of them. An autoist learned this to his cost a short time ago in an experience that he will not forget in a hurry.

On a very steep hill he missed in changing gear, and the car began ti run backward. It had gathered some speed before the rear wheel brakes were applied, somewhat too forcibly perhaps, and being heavy behind with two passengers to one in front, it rose straight up till the rear end rested on the ground. In this position the starting handle, which is a fixture behind, got twisted, so that, after the passengers had gathered themselves up and returned the car to its normal position, the engine could not be started. The use of some tools brought the handle round far enough to start the engine, and the car resumed its journey.

Soubrette, Monkey and Motor.

A soubrette on tour at New Haven, Conn., while riding in an electric vehicle met with a terrible misadventure last week. She had taken her monkey—a real one—for a ride, and it suited the simian's fancy to seize hold of the "lever" that controlled the power, and, gripping it firmly with his tail, caused the vehicle to dash into the curb. The vehicle was smashed to smithereens, of course, but the soubrette was able to give her performance as usual that day.

The Tell-Tale Grease Spot.

A few drops of oil under the car make a pretty good tell tale if you like to keep "tab" on your mechanician. If he says he has oiled or greased the bearings and the floor is spotless, although the car has been standing in the same spot, it is long odds that he is—well, prevaricating. If you want to be on the safe side, have him do it again under your own eyes.

Motor Truck for Telephone Use.

The all around usefulness and economy of motor business vehicles were shown in this city one day last week. A new truck had just been delivered to the New York Telephone Co., and was being given its first real test in the hauling and handling of the big cables.

Heretofore it has been necessary to cart the cables, on their drums, to points of distribution. There manually worked windlasses were secured in position and six men put to work drawing the cable through the underground pipes. The manholes are approximately 280 feet apart, and it takes the six men thirty minutes to pull a cable through, in addition to the time used in setting up and taking down the hand windlass at each point of operation. With the electric truck and its windlass the cables are carted to the point of entering and then the truck moves on to the next opening. Here the electric windlass is brought into action and the 280 feet are negotiated in seven minutes, this being as fast as the cable can be fed. Once the cable is through there is no time wasted in taking up, loading and unloading.

Second-Hands His Specialty.

It's here at last. The automobile business has truly "arrived." Its coming was not hailed by birds that were sweet harbingers of spring exactly, but by a very wise bird who is always found where crumbs are likely to be thickest. In short, L. C. Jandorf. If you've a second hand machine to sell or exchange, it doesn't matter what it is, how old it is or hardly anything else, Jandorf will buy it or trade you. If he doesn't don't look any further; throw it away or present it to your dearest enemy. Jandorf is a born trader. Under the name of the New York Automobile Exchange, No. 1,786 Broadway, a Motor World man discovered him last week. He has already corralled a storefull of second hand machines, and business was in full blast. Yes, he was ready to buy anything or sell anything, and in addition expected to take the agency for several makes of cars, he announced between scurries from one end of the store to the other.

About Mechanical Valves.

Although so many of the French makers are fitting mechanically operated inlet valves, it should be clearly understood that several of them are not placing the valves on opposite sides of the cylinder head. That is to say, instead of having the exhaust valves on one side of the engine and the inlets on the other, with a separate cam shaft to operate each set of valves, the valves are all placed side by side, the exhaust and inlet for each cylinder being on the same side and operated by a single shaft. This, of course, tends toward simplicity, but it has objections of its own, although the very fact that it obviates the necessity of a second valve shaft and gear is a strong point in its favor.

New Zealand's Sane Law.

Common sense plays a very large part in the makeup of New Zealanders, as their general legislation shows. Within a short time they have tackled the automobile question, and handled it in a manner void of offence and worthy of emulation.

In effect the act, which was passed in September, allows that automobiles may be driven at any reasonable pace in the country, but in towns they are subjected to the same restrictions as horse propelled vehicles, which are controlled by local laws under the supervision of the colonial secretary. It has not been found necessary to define a speed limit either for horse drawn vehicles or automobiles.

The only difference to the rate of speed is the following: "The person in charge of a motor car shall not permit such car to travel along a road, street or public highway at a greater rate of speed than is reasonable."

Keeping Pressure Applied.

Pressure should always be kept on screw down feed lubricators serving heavy grease to bearings and drivers should get into the habit of giving the caps of the lubricators an eighth, quarter or half turn frequently, as overmuch is vastly better than too little lubrication in these parts. When taking out a new car it is best to make certain that the grease cup has been filled and screwed down, and filled and screwed down again and again, until the grease is really serving on to the bearing, for in some cars the pipe leads from these lubricators are so long that several charges of the lubricator are necessary to fill the pipe before the grease really reaches the bearing. New bearings have often been jammed for lack of this precaution.

Too Lavish use of oil.

There is such a lavish use of oil and grease in connection with motor cars that it is almost an impossibility to prevent its dripping on the floor. While there it of course comes in contact with the tires—that is, unless unusual precautions are taken to prevent it. But that these precautions are worth while every one who has given the matter attention knows. Rubber and oil are natural and life long enemies. The former soon goes to the bad if it is kept in contact with oil. The latter soon rots the tire and destroys its life. With tires at their present price a little care in this respect will save a great many dollars.

When a Chain Breaks.

Should a chain break and it cannot be repaired, it is always possible to get home on one chain. The free countershaft sprocket must be prevented from revolving (this can usually be done by winding the broken chain round it and fixing it to the frame), and the car can then be driven, but it must be noted that holding one side of the differential nearly doubles the speed, so the car must be driven very carefully, or damage may be done to the differential.

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LIGHT ON LUBRICANTS

The Good, Bad and Indifferent Kinds Described —Charcoal-Filtered Oil.

That there are cylinder oils and cylinder oils is a cold, concrete fact that is sooner or later—usually sooner—borne in on autoists. Suitable oils accomplish their purpose. Unsuitable ones are at best a makeshift, at their worst only a little better than water or other similar liquid. A little experience teaches the autoist which is the right and which the wrong sort.

"Cylinder oils may be divided into three groups," remarks a man who has made a study of the subject.

"First, there are the transparent pale amber-colored oils, produced by distillation and treatment with sulphuric acid and soda, from the tarry residuum contained in the manufacture of petroleum burning oil. Oils of this class were originally used for the lubrication of steam cylinders, but their use has now been almost, if not entirely, abandoned on account of their deficiency in respect to body and their low flashing point.

Second, there are the opaque dark greenish brown oils, prepared by settling crude petroleum in tanks subject to heat, and by filtration through canvas, wire gauze, waste, or some similar mechanical medium, in order to remove sand or grit, and by partial distillation to remove the lighter and more volatile fractions. As the cylinder oil produced by this process is the portion which remains in the still, it is evident that it must retain all the tarry or bituminous matter present in the original crude oil, but in a larger percentage in proportion to the reduced volume of the bulk. It is also evident that when, as in steam cylinders (in some to a greater extent than others), tarry deposits are to be apprehended and deprecated, and still more in the case of motor cylinders, in which, from the intense heat, the production of such deposits may be promoted by the partial destructive distillation of the lubricant, the introduction of such a tarry basis ought to be avoided. There is, however, no objection to the use of such oils in an oil-tight gear-case, or on ordinary bearings adapted for the use of oil, save the general inconvenience of unnecessarily multiplying the oils to be used on any car.

"Third, come the opaque dark amber colored oil, produced by the Cheeseborough vaseline process by the filtration of oils of class 2 through beds or columns of animal charcoal at a high temperature. The effect of this charcoal filtration is to slightly reduce the body or viscosity of the oil, but as this reduction is due to the withdrawal of the natural tar or bitumen, which can hardly be regarded as a lubricant, I do not think that the loss of this meritricious body can in any way except favorably affect the value of the oil.

"On the other hand, it has been found over and over again taht in cases in which, from the construction of the cylinder, or priming, or from other conditions, trouble was occasioned by the use of natural unfiltered oils from the formation of deposits, or from imperfect lubrication, these sources of trouble have disappeared when charcoal filtered oils—either pure or enriched by the addition of a little fatty matter—have been adopted.

"The reason for the removal of the deposit difficulty has been suggested above. The reason for the superior lubricating properties of charcoal filtered oils is probably due to the greater facility with which they seem to permit of more perfect diffusion through steam, and consequently of their more uniform and complete distribution over the walls of the cylinder and the sides of the pistons and valves. Some idea of this effect may be obtained by allowing a drop of each oil, natural and filtered, to fall on a hot metal plate and by observing how much more rapidly the filtered oil spreads over the surface.

"The characteristic differences of the oil may also be seen in the behavior of natural and of filtered oils in passing through the glass tube of a sight-feed lubricator. The natural oil, it will be seen, hangs on tenaciously to the nipple, from which it parts reluctantly in a pear-shaped drop, which ascends through the water in a wobbling manner, smudging and obscuring the glass on its upward course. The filtered oil breaks off sharply in a well-defined globular form, and shoots directly to the top of the tube without touching the sides."

Willis Gets a Wonderful Plug.

Among other features in the line of improved ignition to be seen at the show will be a newly patented spark plug of German make that is claimed to be absolutely non-carbonizing, non-breakable and proof against interference by oil. It will be exhibited in operation and giving regular sparks while having oil dropped on it.

This plug is the invention of L. G. Herz, who formerly was employed in the Mercedes factory. It is known as the Herz plug, and the agency for the United States and Canada has been taken by E. J. Willis, of 8 Park Place.

Neither porcelain nor mica is used in the construction of the plug, a composition of stone being substituted. A representative of the Motor World saw the merits of the plug demonstrated recently, and the exhibition certainly was remarkable. The plug was first covered with oil, and oil was put into the explosion chamber of a Kelecom engine. When the motor was started a fat spark was given regularly, with never a miss. The engine was run until the plug was hot, and then it was removed and dropped into cold water to show that it would not crack. It did not seem to be in the least injured. There is no platinum in it, and the parts are interchangeable. The plug is not an economical one, but it seems to do the trick, and it is claimed that it never has to be cleaned.

PAINT AND VARNISH

On Motor Cars They Suffer Greatly From Neglect and Severe Usage.

It is a somewhat regrettable but very noticeable fact that the average autoist is not so particular about the appearance of his vehicle as is the average carriage owner. He has, however, several excuses on his side for deficiency in the matter of paint and varnish, one at least being that however spick and span his car may be at starting his journeys are seldom short enough or over sufficiently clean roads for such a decorative state to persist to their conclusion.

Another point, also, which deserves some notice, is the want of durability of varnish or paint under the conditions prevailinga with a motor vehicle, which, though sometimes due to lack of the laborious and prolonged care given to the production of a surface on good coach work, seems to be more justly attributed to the deteriorating effect of road dust at high speeds. The effect of the "sand-blast" on such hard materials as glass and porcelain is familiar, and there can be little doubt that to a similar action is due the want of durability of motor carriage paint work. The principal effect will usually be noticed on the paint at the back of the car, where the inrush of dust-laden air is most violent; and it is difficult to see how any painted surface can be made to resist it.

Still, a good automobile is quite as worthy of attention to its outward appearance as any other carriage, and neglect of it produces an unfavorable impression on the uninformed public.

Why not Certificates for Horsemen?

"Now that autoists are becoming so numerous on the road, I think it time to enter a plea for the better regulation of horse-drawn vehicles," remarks a facetious user. "At present, any one appears to be regarded as competent to drive a horse and carriage, with the result that accidents are frequent. As it is becoming recognized that the horse is a creature of uncertain temper, I do not see why certificates of competency should not be issued to drivers who have satisfied some one appointed by the local authority that they are sufficiently skillful to manage a horse of ordinary habits. The idea may seem strange, but when we remember how many accidents have been caused by shying horses which have got beyond the control of incometent drivers we are justified in the demand.

The Federal Manufacturing Company are felicitating themselves upon having just closed a deal that involves the equipment of all Cadillac automobiles with Diamond driving chains, 1 inch pitch, ½ inch wide.

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THE SHELBY MOTOR CAR CO.



MANUFACTURERS OF

The Shelby

- 10 H. P. Combination Two and Four Passenger Car.
- 20 H. P. Touring Car.
- 20 H. P. Light Delivery Car.

Our Exhibit at the New York Show will be found in the **"Basement" Space 4.**

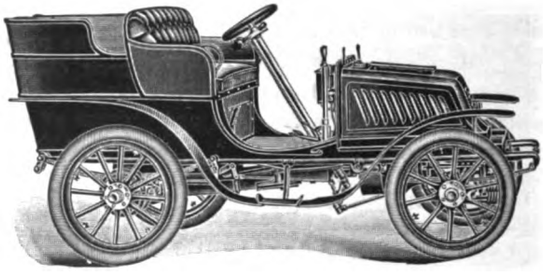
From a standpoint of **Quality** our Exhibit should be located on the **"Garden Roof."** Come **DOWN** and see our Exhibit while attending the show, or write us for Catalogue and particulars.

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It puts money in your pocket and leaves more in those of your customers' than any automobile you can sell them. You are both happy.

Happiness is catching; that's why SPAULDING owners have lots of friends who increase the demand.



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Here's why. It lists at **$700.00** and is the biggest and best seven hundred dollars worth of automobile ever offered.

Contains a motor that develops 7 H. P. (actual) at 700 revolutions. Weighs 1,100 pounds, carries four people anywhere, and is absolutely reliable and high-class in every respect. Write us—now if you're wise.

CENTURY MOTOR VEHICLE CO.,
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The Week's Patents.

716,907. Resilient Tire for Wheels. Jean P. Legrand, Levallois-Perret, France. Filed March 26, 1901. Serial No. 52,932. (No model.)

Claim.—1. In a wheel, the combination of a rim having bent over edges, a cover having enlarged and thickened edges which fill said rim under its bent over edges, and a series of hooks spaced from each other and fixed to said cover at the outside of said rim, and extending within said rim, and forming bearing surfaces for said rubber cover against the edges of said rim.

716,917. Motor Vehicle. Hiram P. Maxim, Hartford, Conn., assignor, by mesne assignments, to Morton Trust Company, trustee, a corporation of New York. Filed Oct. 16, 1900. Renewed June 3, 1902. Serial No. 110,061. (No model.)

Claim.—1. In a motor vehicle, a vehicle body, a motor for propelling same, and a bodily removable dash or casing inclosing a portion of the motor, substantially as described.

716,960. Metallic Tire. William Thompson, Woodstock, Canada. Filed June 11, 1902. Serial No. 111,206. (No model.)

Claim.—1. In a metallic tire the combination of the rim and a series of annular sections secured thereto having their meeting edges overlapping to form the tread of the tire and movably embrace the sides of the body portions and provided with a series of internal section spacing protuberances, substantially as specified.

717,000. Internal Combustion Engine or Motor. Charles E. Henriod, Neuilly-sur-Seine, France. Filed Nov. 9, 1898. Serial No. 695,971. (No model.)

Claim.—The combination with a casing, provided with air and fuel admission openings and a mixing chamber, of two valves arranged one above the other with the mixing chamber between them, one of the valves controlling the admission of fuel to the mixing chamber, and the other valve controlling the escape of the mixture of fuel and air from the mixing chamber, a spindle on the last mentioned valve, a hollow spindle on the fuel controlling valve through which the first spindle loosely passes, an adjustable abutment on the casing, an abutment on said hollow spindle adapted to strike against the abutment on the casing to limit the downward movement of the hollow spindle, and an abutment on the spindle of the mixture controlling valve arranged above the abutment on the spindle of the fuel controlling valve, all arranged for co-operation as and for the purpose specified.

717,078. Muffler. Charles E. Christman, San Jose, Cal., assignor to Christman Motor Carriage Co., San Jose, Cal., a corporation of West Virginia. Filed Aug. 8, 1902. Serial No. 118,881. (No model.)

Claim.—1. A muffler comprising an outer and an inner cylinder, means for connecting the exhaust with the inner cylinder, a plurality of condensing pipes located in the inner cylinder and communicating with the exhaust and with the outer cylinder, and a plurality of discharge pipes located in the outer cylinder and communicating with the inner cylinder and with the atmosphere, substantially as and for the purpose set forth.

717,079. Device for Transmitting Rotary Motion to Vehicle Wheels. Oliver Cluts, Cuba, Ill. Filed Aug. 2, 1902. Serial No. 118,075. (No model.)

Claim.—A device for transmitting rotary motion to vehicle wheels and for steering the same, consisting of a revolving shaft suitably journalled, a spindle swivelled to said shaft, a hub fixed at its outer edge to the outer portion of said spindle, a collar interposed between said hub and spindle and supported from a stationary point and being adapted to swing in a horizontal plane and a means for swinging said collar, a ball bearing interposed between the outer end of the collar and the spindle and a ball bearing interposed between the inner end of the spindle and the collar and the ball bearing interposed between the inner edge of the hub and the collar, the hub and the collar at all other points being disconnected from each other.

717,107. Secondary Battery. William Morrison, Chicago, Ill., assignor to King Upton, Chicago, Ill. Filed May 19, 1900. Serial No. 17,206. (No model.)

Claim.—1. In a storage battery, the combination of a suitable electrolyte, and positive and negative elements immersed in said electrolyte, one of said elements having a paste containing fluorin.

717,108. Secondary Battery. William Morrison, Chicago, Ill., assignor to King Upton, Chicago, Ill. Filed Aug. 5, 1901. Serial No. 70,954. (No model.)

Claim.—1. A storage battery, comprising positive and negative plates and an electrolyte, in which flourin is present.

2. A storage battery, comprising a negative plate carrying a paste of minimum, a positive plate carrying a paste of litharge, and an electrolyte in which flourin is present.

717,165. Device for Inflating Tires of Vehicles. Ida B. Catlin, Philadelphia, Pa. Filed June 28, 1902. Serial No. 113,682. (No model.)

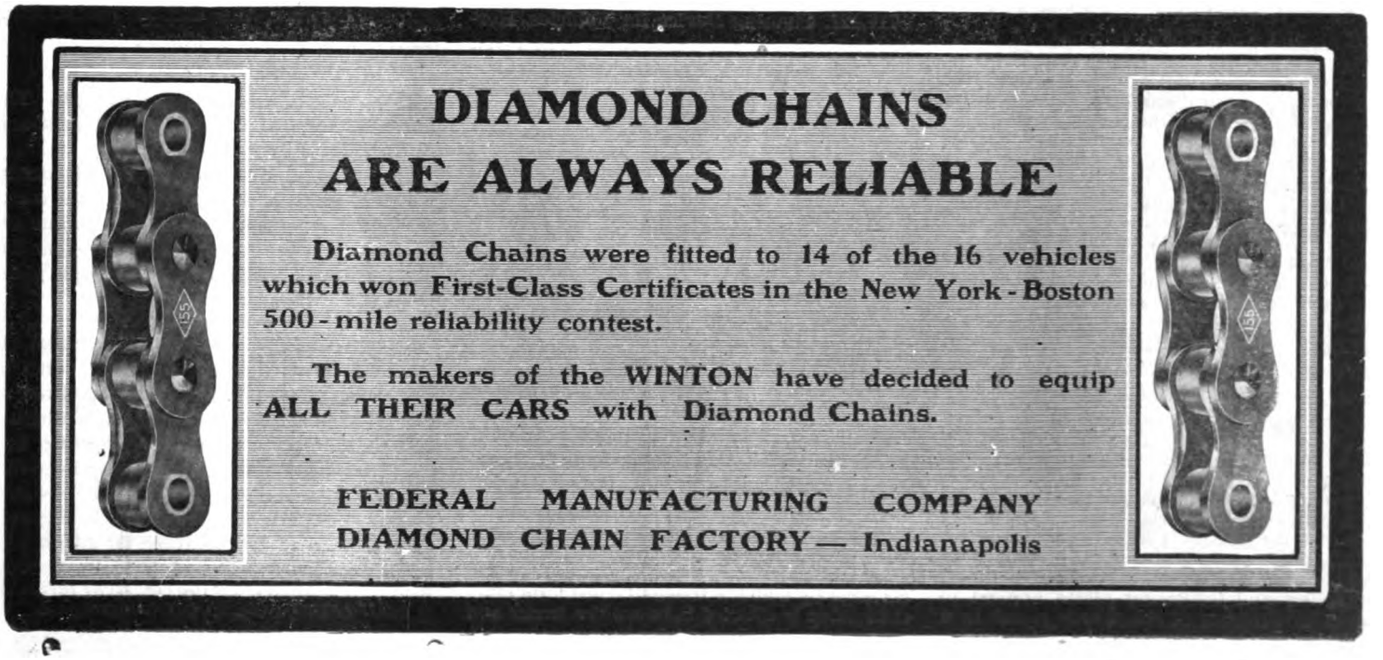
Claim.—1. In a device for inflating the tires of vehicle wheels, a wheel, an annular chamber secured thereto and having an opening in its side, combined with a non-rotatable plate covering said opening, means for admitting air through the plate into the chamber, and means connecting the chamber with the inflatable tire.

717,250. Vehicle Body. Lewis C. McLouth, Hector J. Hayes, and Joe H. Wissman, Cleveland, Ohio, assignors to the Eastman Automobile Company, Cleveland, Ohio, a corporation of West Virginia. Filed April 22, 1901. Serial No. 56,860. (No model.)

Claim.—1. In a vehicle body, the combination with a lower base frame constructed from a continuous piece of angle iron, of a continuous metal sheet having its lower edge secured to said frame and forming the sides and rear of said body.

717,263. Protector for Rubber Tires. Herbert R. Palmer, Cleveland, Ohio, assignor of one-half to Omar Stoppel, Cleveland, Ohio. Filed Aug. 27, 1901. Renewed June 6, 1902. Serial No. 110,510. (No model.)

Claim.—1. A protecting covering for a



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vehicle tire, consisting of a flexible backing carrying rivets whose heads are on the outer side of the backing and are in staggered position and nearly abut but do not overlap, and whose shanks extend through the backing and are upset on the inner side thereof, substantially as described.

717,264. Pneumatic Tire. Herbert R. Palmer, Cleveland, Ohio, assignor of one-half to Omar Stoppel, Cleveland, Ohio. Filed Oct. 11, 1902. Serial No. 126,862. (No model.)

Claim.—1. A pneumatic tire, comprising an inner tube and an outer sheath vulcanized together, numerous rivets in the sheath having their heads substantially flush with the outer surface thereof, having their shanks extending through the sheath, washers on the shanks on the inner side of the sheath, the rivets being upset beyond the washers, substantially as described.

717,269. Lubricating Device for Vehicle Wheels. William F. Probst, Chillicothe, Ohio. Filed Sept. 13, 1902. Serial No. 123,289. (No model.)

Claim.—1. The improvement in wheels substantially as herein described, comprising the hub grooved in its outer edge and provided in its opposite faces at its outer edge with the annular rabbets, the slide plates secured at their inner edges in the said rabbets and projecting outwardly from the said hub, one of said slide plates being provided with the radially extending groove in its inner face, said groove being closed at its outer end, the cushion ring seated in the groove of the hub between the said slide plates, and the spoke ring fitting between the slide plates and upon the cushion ring and provided with an oil feed passage and at its opposite faces with oil grooves extending around the ring and supplying lubricant to the bearing between the sides of the spoke ring and the slide plates, and said spoke ring being provided with the radially projecting plate overlapping the groove in the slide plate and extending to the closed outer end thereof, and the roller journalled to the spoke ring and overlapping the oil groove in the side thereof, and operating within the groove of the slide plate, substantially as and for the purposes set forth.

717,292. Throttle Valve. Charles I. Shawver, Springfield, Ohio, assignor to Augustus B. Nolte, Springfield, Ohio. Filed July 14, 1902. Serial No. 115,397. (No model.)

Claim.—1. A throttle valve comprising a casing having an inlet passage, a valve chamber of larger diameter communicating therewith at one end, and a valve seat at the outlet end of the valve chamber, in combination with a valve having an imperforate body portion of less diameter than the valve chamber in which it is longitudinally movable, adapted to fit the seat at the outlet end thereof and having a hollow cylindrical extension on its opposite side fitting within the inlet passage, the wall of said extension having apertures thereto substantially as described.

717,351. Storage Battery. Charles H. Clare, Quincy, Mass. Filed March 1, 1902. Serial No. 96,222. (No model.)

Claim. 1. The improvement in secondary or storage batteries herein described, the same comprising one or more units each consisting of independent porous plates bearing active material, lead plates held in contact with said active material, passage extending between the porous plates, and means for holding the porous plates against each other and the lead plates comprising porous plates protecting and insulating plates applied to the outer surfaces of the porous plates in a manner to prevent the escape of the active material laterally or downwardly therefrom and also forming a protection for them.

717,394. Electric Battery. Henry Halsey, New York, N. Y., assignor, by mesne assignments, to Halsey Electric Generator Company, Jersey City, N. J., a Corporation of New Jersey. Filed April 18, 1902. Serial No. 103,641. (No model.)

Claim.—1. The method of regulating the output of a battery which consists of brushing one of the elements and varying the rapidity with which said brushing is carried on.

717,395. Electric Battery. Henry Halsey, New York, N. Y., assignor, by mesne assignments, to Halsey Electric Generator Company, Jersey City, N. J., a Corporation of New Jersey. Filed Apr. 18, 1902. Serial No. 103,649. (No model.)

Claim.—1. In a battery, the combination of a casing, a plurality of parallel elements supported in said casing, each of said elements having a recess in the upper portion thereof, a cover for said casing, a shaft having its bearings supported by said cover, said shaft being located within said recess when the cover is in position, a brush or brushes carried by said shaft, and means carried by the cover for rotating said shaft, substantially as described.

717,416. Secondary Battery. Isidor Kitsee, Philadelphia, Pa. Filed April 10, 1893. Serial No. 469,822. (No model.)

Claim.—1. An electrode for electric cells, comprising a conducting strip bent so as to provide a series of spaces capable of expanding, independently-formed blocks of active material arranged within said spaces, said blocks being provided with holes or apertures, and means surrounding the electrode and located opposite the face-surfaces of said blocks for holding said blocks in place.

717,417. Gasolene Engine. Ernest E. Koken, St. Louis, Mo. Filed June 14, 1901. Serial No. 64,498. (No model.)

Claim.—1. The combination with a high and a low pressure cylinder and an inlet and exhaust chamber; of a rotary valve for the high pressure cylinder adapted to serve as a means for communication from the inlet chamber to the said cylinder, and from said cylinder to the low pressure cylinder and to the exhaust chamber successively.

717,421. Steering Device for Vehicles. Herbert J. Leighton, Syracuse, N. Y. Filed Oct. 29, 1902. Serial No. 129,233. (No model.)

Claim.—1. In steering apparatus for vehicles, in combination with a main axle having wheel bearing axles pivoted thereto, lever arms secured to said pivoted axles, a link connection between said lever arms, a steering rod operatively connected with said lever arms, and a steering shaft; a steering pinion eccentrically secured upon said shaft, and means between said pinion and said steering rod connecting them in movable engagement whereby the turning of the pinion moves the rod and wheels, said engagement being at the minimum radius of the pinion when the wheels are in position for running in straight course, by which means the wheels are locked against accidental shifting, substantially as specified.

717,430. Transmission Frame for Automobiles. Henry K. Milner and John M. Lansden, jr., Birmingham, Ala. Filed Aug. 2, 1901. Serial No. 70,654. (No model.)

Claim.—1. The combination with the body portion of a motor vehicle provided with side sills, and an axle, of a transmission frame or carriage by which a free and constant sliding connection is effected between the frame and the side sills of the vehicle body, a motor located on said transmission frame or carriage, a gear on the shaft of the motor, a counter shaft, a differential gear thereon intermeshed with the gear on the motor shaft, sprocket wheels on the counter shaft, wheels in which the axle is supported and sprocket chains extending from the sprocket wheels on the counter shaft to sprocket wheels on the hubs of the vehicle wheels.

717,508. Governor for Explosive Engines. Harry H. Segner and Charles B. Segner, Hagerstown, Md. Filed Sept. 13, 1901. Serial No. 75,245. (No model.)

Claim.—1. In an explosive engine the combination of the reciprocating rod connected with the exhaust valve, a latch pivoted on said rod, a stationary catch on the frame adjacent thereto and adapted to directly engage said latch to hold said rod in position to hold said valve open when the speed exceeds that desired, and a sliding weight mounted on said rod to engage with said latch and hold it out of engagement with said catch when the speed does not exceed that desired, substantially as set forth.

2. In an explsovie engine, the combination of the exhaust valve, a reciprocating rod for operating it, a latch pivoted to said reciprocating rod.

717,517. Engine and Driving Gear Support for Steam Wagons. Paul H. White, Indianapolis, Ind., assignor to White Steam Wagon Company, Indianapolis, Ind., a corporation of Indiana. Filed March 7, 1902. Serial No. 97,114. (No model.)

Claim.—1. The combination in a self-propelling wagon, of suitable carrying wheels, a frame composed of connected side bars carried by the wheels, a pair of intermediate bars parallel with and between the side bars and supported thereon, a transmission shaft 20 supported in suitable bearings carried by one of the side bars and the adjacent intermediate bar, an engine supported on the other side bar and the adjacent intermediate bar with its shaft in alignment with the shaft 20, driving connections between the engine shaft and shaft 20, a transmission shaft 30 supported in suitable bearings carried by the two side bars and the first mentioned intermediate bar, driving connections between the two transmission shafts, and a driving connection between the second transmission shaft and the carrying wheels.

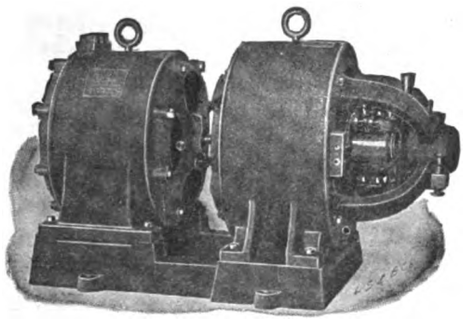
TRADE MARKS.

39,585. Certain Named Gas Engines. The Lozier Motor Co. of New York, Plattsburg, N. Y. Filed July 10, 1902.

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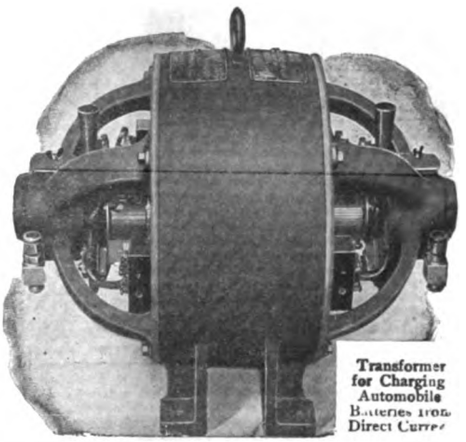
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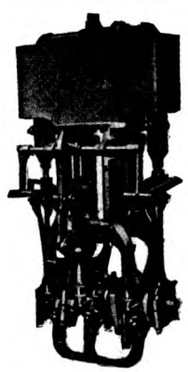
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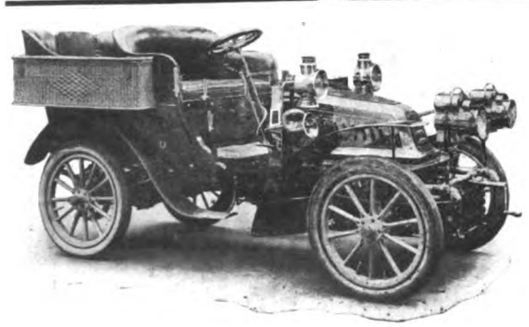
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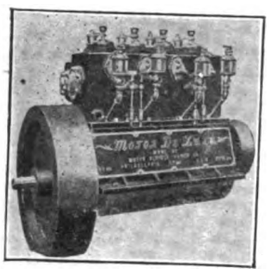
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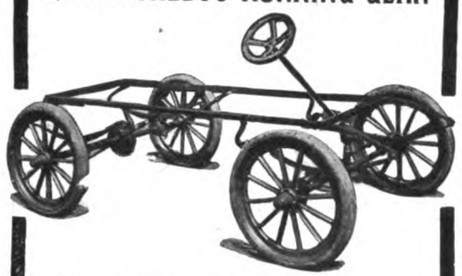
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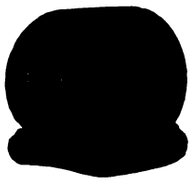


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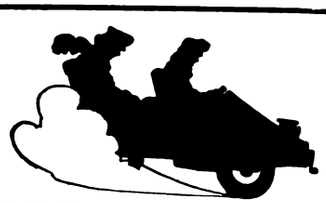
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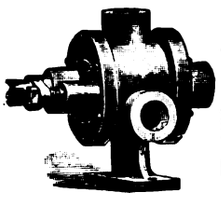
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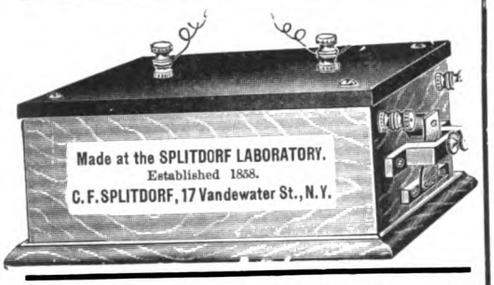
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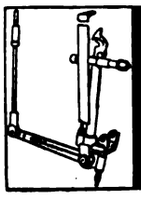
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Get a Good Night's Rest

THIS ALWAYS ASSURED

When you use the

Compartment Sleeping Cars

CINCINNATI to CHICAGO

via

C H & D and Monon

A room to yourself.
Regulate the heat, light and ventilation to suit your convenience.
Every necessary toilet convience in your room.

Ask any ticket agent for train schedules, or address

D. G EDWARDS, P. T. M., Cincinnati, O.

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BEFORE BUYING EXAMINE THE

WHITE STEAM TOURING CAR

FOR 1903

THE WHITE IS A STEAM CAR WITH THE DISTANCE OF A GASOLENE AND THE EASE OF OPERATION OF AN ELECTRIC.

In the 500 mile Reliability Contest from New York to Boston and return, arranged by the Automobile Club of America, three WHITE STEAM STANHOPES covered the distance without stop or trouble of any kind—a perfect performance.

THE WHITE STEAM GENERATOR

is absolutely non-explosive, gives pressure in five minutes from cold water, and once in motion is self-regulating.

The same motive power which has been so successfully used in former White models will be used in the new touring car.

Write for full particulars, including Professor Thurston's report on our steam generator, and the official reports of important endurance contests.

SPECIFICATIONS

PRICE, .	$2,000.00
SEATING CAPACITY, . . .	Four
RATED HORSE POWER, . .	Ten
ENGINE, ...	Compound
WHEEL BASE, ...	6 ft., 8 in.
TREAD, ...	4 ft., 8 in.
WHEELS, ...	30 inches
TIRES, (Goodrich Clincher) .	4 inches
WEIGHT, (Tanks Filled) . .	1650 lbs.
EXTREME LENGTH, . . .	10 feet
EXTREME WIDTH, . . .	5 feet
EXTREME HEIGHT, . . .	5 ft., 2 in.
CAPACITY OF GASOLENE TANK,	10 gals.
CAPACITY OF WATER TANK,	15 gals.

EQUIPMENT:

CONDENSER, SIDE LAMPS, HORN,
SET OF TOOLS, TOOL CASE

WHITE SEWING MACHINE COMPANY

(*AUTOMOBILE DEPT.*)

CLEVELAND, OHIO.

22 Union Square, New York, N. Y.
509 Tremont St, Boston, Mass.
300 Post St., San Francisco, Cal.
12 Woodward Ave., Detroit, Mich.
609 Main St., Buffalo, N. Y.
300 Rose Building, Cleveland, Ohio.
4259 Olive St., St. Louis, Mo.
1761 Stout St., Denver, Colo.
5979 Centre Ave., East End, Pittsburg, Pa.
Banker Bros. Co., corner Vine and Broad Sts., Philadelphia, Pa.
Walter C. White, European Representative, 19 Princes St., Westminster, London, England.

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If You're Not All Tied Up



and know a Good Thing when you see it, better make the acquaintance of the CADILLAC without delay. Nothing ever produced begins to compare with it. A Thoroughbred in Every Line and the smoothest running car in existence.

EVERY WISE AGENT WILL MAKE IT HIS BUSINESS TO KNOW MORE ABOUT IT WITHOUT DELAY.

CADILLAC AUTOMOBILE CO.

DETROIT, MICHIGAN.

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THE PORTER BATTERY ENJOINED

NEW YORK, January 8, 1903.

Today the United States Circuit Court of Appeals filed an opinion again sustaining the Brush Storage Battery patent owned by The Electric Storage Battery Company, and affirming the injunction granted by Judge Hazel, of Buffalo, against The Porter Battery, which battery is manufactured by the Porter Battery Company of Chicago, and by whom this case has been defended.

THE DECISION IS OF A MOST SWEEPING CHARACTER AND CONFIRMS THE RIGHT OF THE ELECTRIC STORAGE BATTERY CO. TO ENJOIN ALL MANUFACTURERS OF INFRINGING BATTERIES.

THE ELECTRIC STORAGE BATTERY CO.

PHILADELPHIA, PA.

A TRADE TERM:

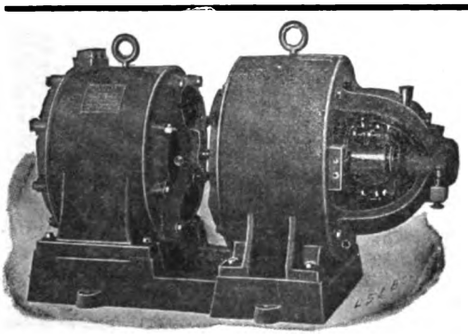
"WESTON-MOTT QUALITY"

IN WHEELS.

ARTILLERY WOOD or WIRE.

GET WITH US. Space 56, N. Y. Show.

WESTON-MOTT CO., Utica, N. Y.



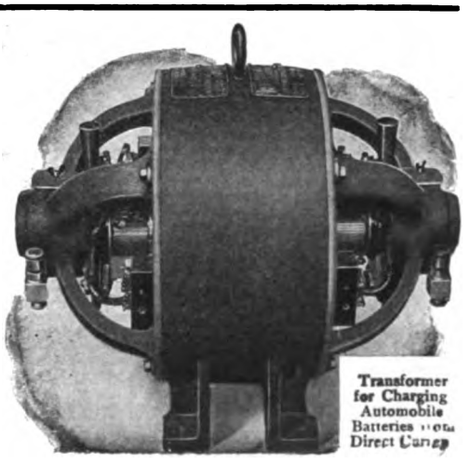
Convertor for Charging Automobile Batteries from Alterhating Current.

WE ARE MANUFACTURERS OF THE

Standard Electric Motors

THAT ARE NOW USED ON ALL THE MOST SUCCESSFUL ELECTRIC AUTOMOBILES in the country.

Our machine is the **MOST EFFICIENT and PRACTICAL OF THEM ALL**—as demonstrated by hundreds of them in daily use all over the country.



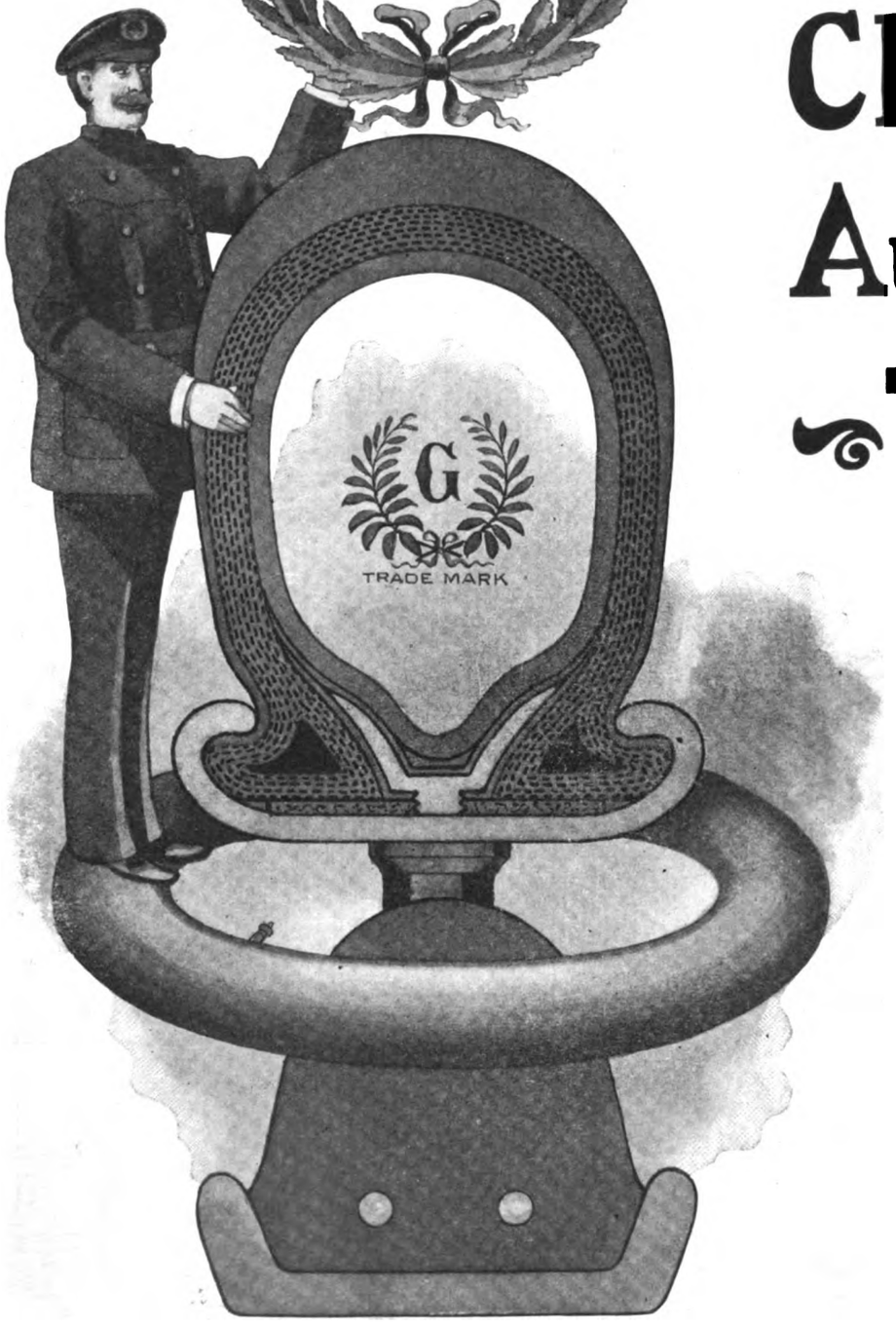
Transformer for Charging Automobile Batteries from Direct Current

THE ELWELL-PARKER ELECTRIC CO.,

CLEVELAND, OHIO.

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GOODRICH Clincher Automobile Tires



THE ORIGINAL AMERICAN CLINCHER

Our construction, our pattern and our style of rim are recognized as the standard by all licensed makers of clincher tires.

A pattern for other manufacturers.

A model automobile tire.

All repairs or adjustments made at the following branches, which carry a full and complete line of standard sizes of tires and parts constantly on hand:

THE B. F. GOODRICH COMPANY,

AKRON RUBBER WORKS,

AKRON, - - OHIO.

BRANCHES:

NEW YORK, 1699 Broadway.
BOSTON, 157 Summer Street.
BUFFALO, 9 W. Huron Street.
DENVER, 1444 Curtis Street.
CHICAGO, 141 Lake Street.
PHILADELPHIA, 922 Arch Street.
DETROIT, 80 E. Congress Street.
SAN FRANCISCO, Gorham Rubber Co.

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"Mobile"

WE HAVE SATISFIED R. H. MACY & CO.
WE CAN SATISFY YOU.

Private Office of R. H. MACY & CO.

ISIDOR STRAUS,
NATHAN STRAUS, } Firm.

NEW YORK, December 23, 1902.

Dear Sir:

In reply to your inquiry, we are pleased to be able to testify to the good service your Mobile Coaches have given us between our old store at Sixth Avenue and 14th Street and our new store at Broadway and 34th Street.

They have been in operation about one month and have traveled full practically all the time, giving particularly good service during stormy weather.

Very truly yours,

R. H. MACY & CO.,
per N. STRAUS.

To JOHN BRISBEN WALKER, President.

GOOD AGENTS WANTED FOR 1903.

SEE OUR EXHIBITS AT NEW YORK AND CHICAGO SHOWS.

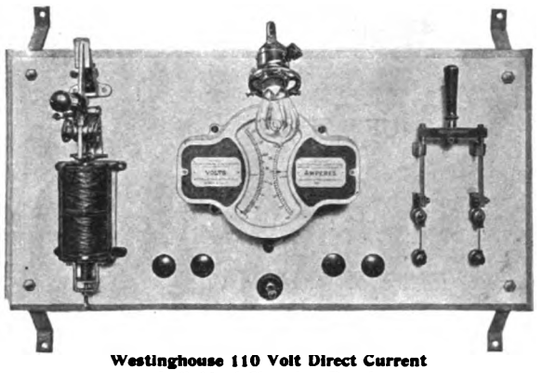
The "Mobile" Company of America,

EXECUTIVE OFFICES: Broadway and 54th Street, NEW YORK.

Branch Houses: BOSTON, CHICAGO, DENVER, SAN FRANCISCO, LOS ANGELES.

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Westinghouse Automobile Charging Apparatus



Westinghouse 110 Volt Direct Current Individual Charging Panel.

For Station and Individual Use

In Standard Units from Well-Tried Apparatus. Details of Established Excellence.

Send for Circular 1061, and see our Exhibits

Booth K, Madison Square Garden, New York
January 17th to 24th, 1903

Cleveland Grays Armory, Cleveland, Ohio
February 2nd to 7th, 1903

Booth 156, Coliseum, Chicago, Ills.
February 12th to 22nd, 1903

Westinghouse Electric & Mfg. Co., Pittsburg, Pa.

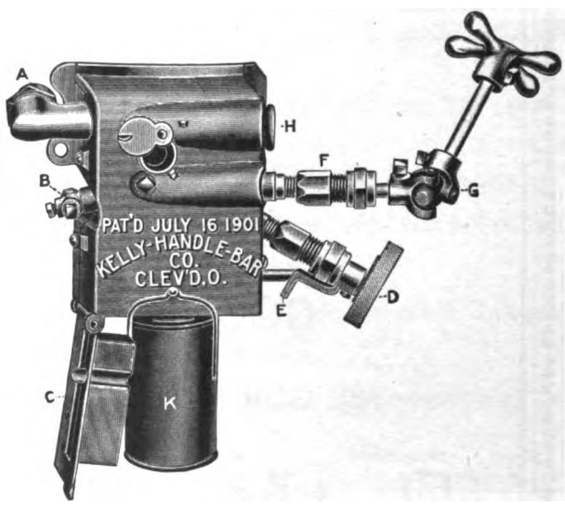
Sales Offices in all Large Cities

Standard Automobile Motive Power Equipments, Circular 1059.

THE NEW

KELLY GENERATOR

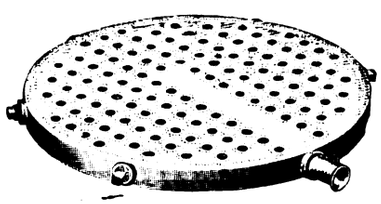
for Steam Vehicles is a Trouble Saver.



No Steam Car is complete without one. Does away with drip cups and all annoyances. Perfected in every way and always reliable.

Strongly made with all connections outside. Easily adjusted. No flaring or flashing in lighting, even in the strongest wind. Main fire controlled at seat. Compact and neat in appearance and enclosed in aluminum case.

ADAPTED TO ANY MACHINE.



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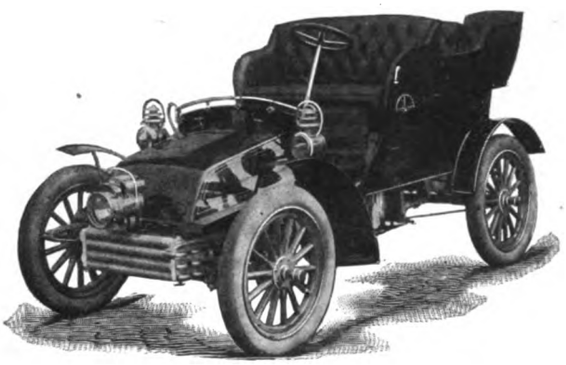
are greatly improved, both in volume and strength. There are no swaged tubes in the construction. Easily cleaned.

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KELLY HANDLE BAR COMPANY, - Cleveland, Ohio.

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New to the trade, but thoroughly tested.

MANUFACTURED

by an established concern with a reputation to sustain

EXHIBITS AT NEW YORK AND CHICAGO.

THE KIRK MANUFACTURING CO.,

TOLEDO, OHIO.

STUDEBAKER ----- ELECTRIC ----- Automobiles



NO EXPERT CHAUFFEUR NEEDED.

CAN BE RUN ANY DAY IN THE YEAR,
BY ANY MEMBER OF THE FAMILY.

WIDE TOURING RADIUS. A 1903 electric vehicle with a battery, which is durable and will give a run of 40 miles on one charge.

A SUCCESSFUL HILL-CLIMBER. Our machines will climb grades which are not only steep, but covered with sand and mud.

SMOOTH OPERATION. Controller has four speeds, allowing an unusual smoothness of operation in starting.

RELIABLE BRAKE CONTROL. All machines equipped with two brakes.

STRENGTH OF CONSTRUCTION. Built to be worthy in every point of the Studebaker name and reputation.

Studebaker Electric Automobiles will be exhibited at both the New York and Chicago Automobile Shows, and can be seen at the following repositories of the

STUDEBAKER BROS. MFG. CO.

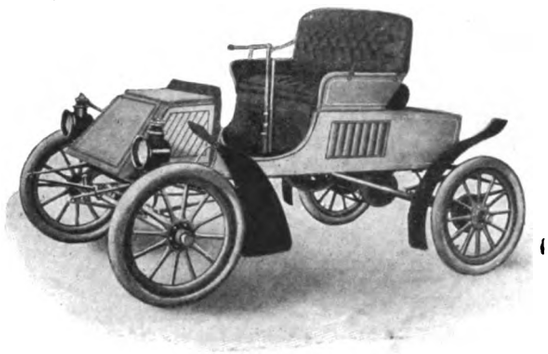
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FIRST-CLASS AGENTS DESIRED IN TERRITORY NOT ALREADY COVERED.

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EQUAL TO THE $2,500 KIND,



but at one-third the cost. Easily said, but as easily proven when you examine the 1903

Rambler TOURING CAR.

Replete with ingenious devices; ample power; long wheel base, 78 inches; artillery wheels and three inch tires; oil tight gears and differential. Strengthened in all its parts to meet the increased power, there is no carriage offers such values at the price,

$750 F. O. B. KENOSHA, WIS.

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THOMAS B. JEFFERY & CO., Kenosha, Wisconsin.

WE EXHIBIT IN SPACES 112 & 113 AT NEW YORK, AND 87 & 88 AT CHICAGO.

In Addition to a Complete Line of

VEEDER ODOMETERS

We shall exhibit at the New York Automobile Show, spaces 13 and 14, and at the Chicago Automobile Show, space 124 our new

VEEDER TACHOMETERS

The TACHOMETER FORM A for use on Automobiles and in Electric Power Stations.
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These instruments mark a distinct advance in the speed indicator line, and we invite the investigation of mechanical engineers, makers of motors and dynamos, users and makers of Automobiles, and mechanical men generally.
Descriptive booklet free upon receipt of application.

Makers of
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and Fine Castings.

THE VEEDER MFG. CO.,
HARTFORD, CONN.

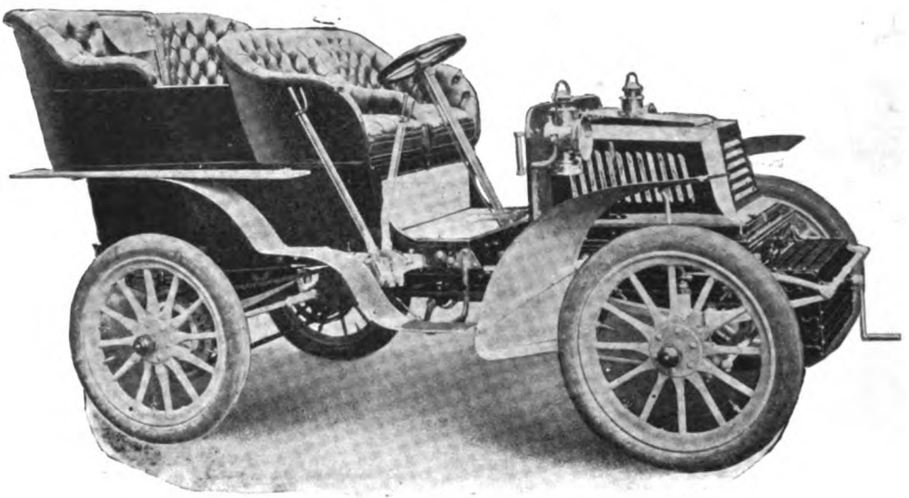
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THE *Searchmont*

THE SEARCHMONT



1903 MODEL, TYPE VII.

OUR new 1903 Model SEARCHMONT is a luxurious touring car, built for intelligent, discerning buyers who want the BEST and who appreciate style, comfort, modern improvements and conveniences. Double cylinder vertical motor situated forward. Four speeds ahead, and reverse. Automatic governor controlling commutator and carburettor. Ignition, dynamo and storage battery combined.

Call at our exhibit at the New York Automobile Show and let us show you the car and explain its many advantages.

SEARCHMONT AUTOMOBILE CO.

PHILADELPHIA, U. S. A.

AGENCIES:

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GITHENS BROS. COMPANY, Chicago.
H. B. SHATTUCK & SON, Boston.
W. E. METZGER, Detroit.
ROCHESTER AUTOMOBILE CO., Rochester.

THE SEARCHMONT

THE *Searchmont*

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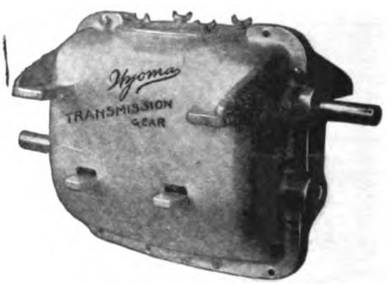
Wyoma Automobile Gasoline Motors

French Type. Water Cooled.
8 H. P., Single Cylinder.
15 H. P., Double Cylinder.

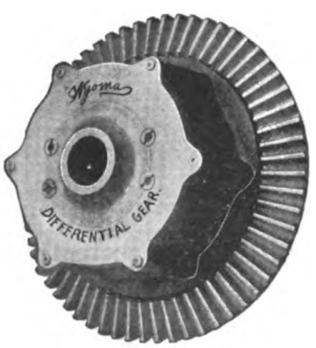
Equal in workmanship finish and service to the best foreign makes.

Wyoma Transmission Gear

3 speeds forward, 1 reverse. New System; no bevel gears. Gears always in mesh. Ball thrust at each end of shaft. Enclosed in aluminum case. Will transmit up to 20 H. P.



WYOMA DIFFERENTIAL SPUR GEAR



Manganese bronze bevel gear. Fitted for either 1¼, 1⅜ or 1½ inch axle.s 8 pitch. 60 teeth. For direct drive. Rod transmission.

We are also manufacturers of Tubular Running Gears. Radiating Coils, Aluminum and Brass Hoods, Wood and Wire Wheels, Auto Mufflers and Carburettors.

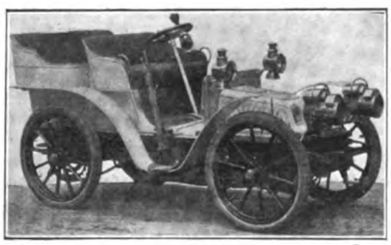
READING AUTOMOBILE & GEAR CO.

Tenth and Exeter Streets, Reading Pa.

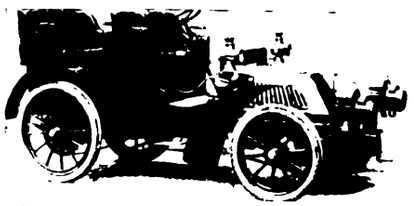
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Highest Class French and American Automobiles.

PEUGEOT, MORS, RENAULT.



8 H. P. MORS.



10 H. P. PEUGEOT.

We will show at **Space 9, "Exhibition Hall,"** Madison Square Garden the 11 and 18 h. p. Mors, 1903 model that created such a sensation at the Paris Automobile Show.

WE ARE ABLE TO MAKE PROMPT DELIVERIES OF 8, 11 AND 18 H. P. MORS AND OF

RENAULT CARS.

DON'T VISIT THE SHOW WITHOUT SEEING US.

We operate the largest and best equipped automobile depot in the United States and carry in stock all kinds of French automobile parts and accessories.

AGENTS FOR ELECTRIC VEHICLE CO.
ELECTRICS CHARGED AND KEPT IN FIRST-CLASS ORDER. STORAGE.
REPAIRS OF ALL KINDS. OPEN DAY AND NIGHT.

CENTRAL AUTOMOBILE COMPANY

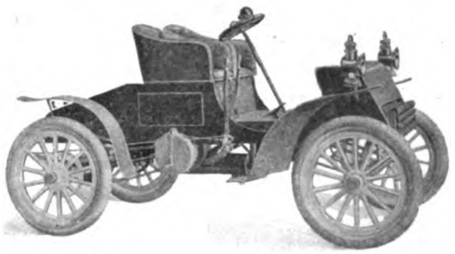
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1684 BROADWAY, NEW YORK CITY.

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That is the Record for Absolute Reliability Established by the

PACKARD MOTOR CAR

It has won the Highest Position of Honor in all these leading contests.

400 Miles—New York-Rochester.
100 Miles—Long Island non-stop. 100 Miles—A. C. A. non-stop.
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$2,500.00.

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BOSTON, H. B. SHATTUCK & SON, 239 Columbus Ave.
CHICAGO, Pardee & Company, 1404 Michigan Boulevard.
LOS ANGELES, Norman W. Church, 439 S. Main St.
SAN FRANCISCO, H. B. Larzalere. 1814 Market St.

IN THE
New York-Boston-New York Reliability Run
THE
Darracq Car
WAS AWARDED THE
HILL TROPHY CUP.



Darracq Lemousine.

Darracq passengers did not have to walk.
The cars climbed all hills, including Foster and Spencer "Terrors."
Darracq Cars hold more records than any other make in the world.

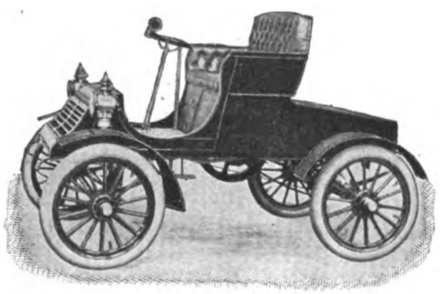
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AMERICAN DARRACQ AUTOMOBILE CO.
F. A. LA ROCHE, Sales Manager,
652 Hudson Street, (Near 14th St. Station, 9th Ave. "L,") **NEW YORK.**

YOU

have no idea how much good there is in an

AMERICAN GASOLENE AUTOMOBILE



Why not look into the matter, and get the most solid comfort possible at a minimum cost? You wont regret it. The best material money can buy goes into the construction of this GUARANTEED SUCCESS.

You will be interested in terms to agents. Write for catalogue.

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WM. F. RUDOLPH, 302 North Broad St. Philadelphia, Pa.

THE SHELBY MOTOR CAR CO.



MANUFACTURERS OF

The Shelby

10 H. P. Combination Two and Four Passenger Car.
20 H. P. Touring Car.
20 H. P. Light Delivery Car.

Our Exhibit at the New York Show will be found in the **"Basement" Space 4.**

From a standpoint of **Quality** our Exhibit should be located on the **"Garden Roof."** Come **DOWN** and see our Exhibit while attending the show, or write us for Catalogue and particulars.

Address Department "F."

THE SHELBY MOTOR CAR CO.,
SHELBY, OHIO

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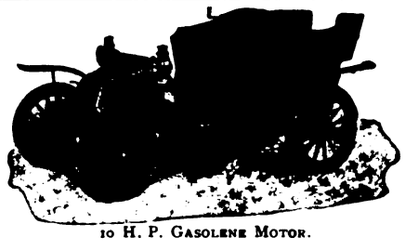
THE AUTOCAR

INDUCEMENTS!!!

Points of merit only:—Safety, Reliability, Ease of Operation, Accessibility, Beauty of Design, Abundance of Power, Economy of Fuel, Freedom from Noise and Vibration, Ease of Riding, Reasonable Price.

Do not buy until you see "THE AUTOCAR."

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10 H. P. Gasolene Motor.

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We Show at New York and Chicago.

THE AUTOCAR CO., Ardmore, Pa.

Automobile Builders

Should visit our **Space No. 42,** where they

WILL ABSORB VALUABLE IDEAS.

The Standard Welding Co.

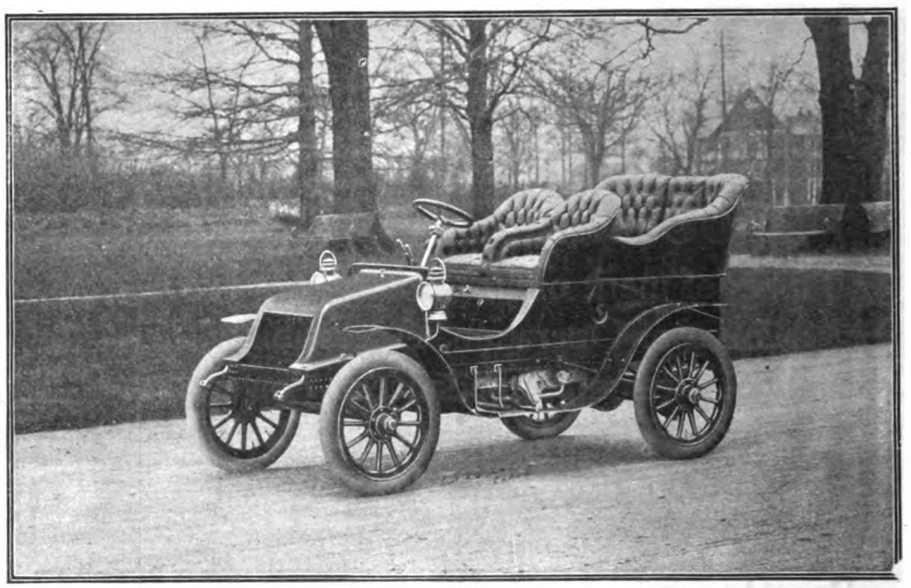
CLEVELAND, OHIO.

Member National Association Automobile Manufacturers.

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Our Limit.

ONE thousand WINTON TOURING CARS will be manufactured during the current year. Even with greatly increased facilities and a system for production not excelled by another automobile manufactory in the world, we cannot go beyond the one-thousand mark and incorporate in every car the standard of Winton excellence. With this necessarily limited production we cannot expect to meet demand, hence this early opportunity to caution prospective buyers upon the wisdom of getting "under cover" early with their orders.



WINTON SALES BRANCHES AND AGENCIES ARE IN NEARLY EVERY IMPORTANT CITY IN THE COUNTRY. OUR NEW CATALOG IS SO FRESH FROM THE PRESS THAT THE INK IS SCARCELY DRY. DO YOU WANT A COPY?

The Winton Motor Carriage Co., Cleveland, O.

YOU'LL HAVE TO HURRY

In order to secure either the agency or the possession of the new



Century Gasolene Runabout.

Here's Why. It Lists at $750.00

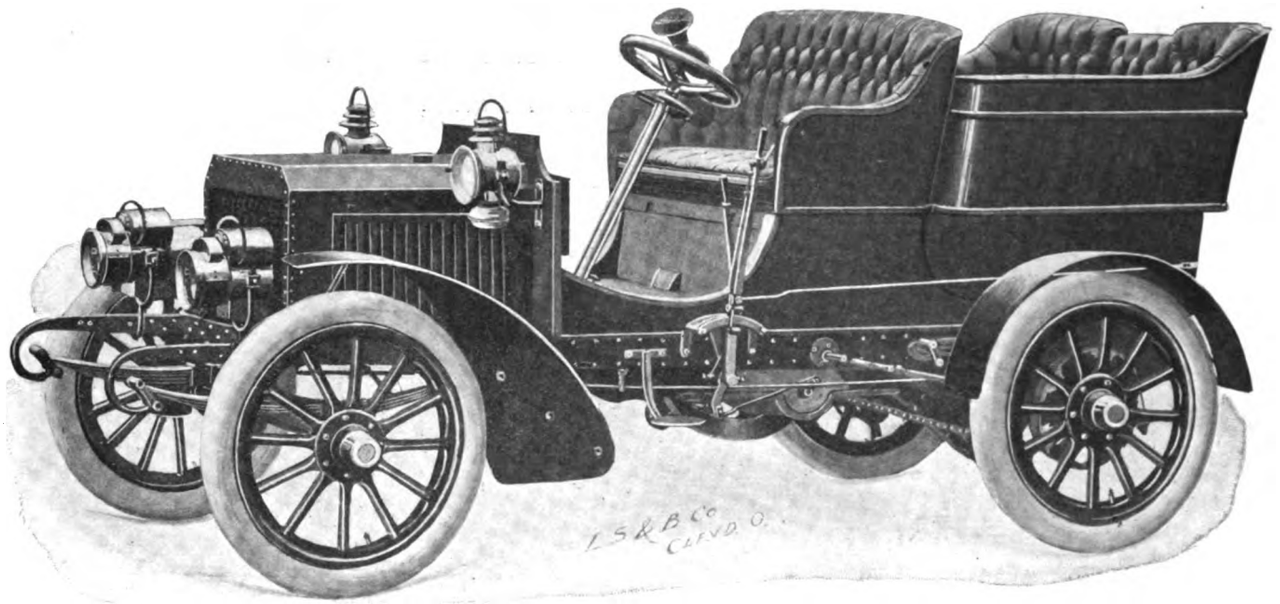
and is the biggest and best $750.00 worth of automobile ever offered.

Contains a motor that develops 7 H. P. (actual) at 700 revolutions. Weighs 1,100 pounds, carries four people anywhere, and is absolutely reliable and high-class in every respect. Write us—NOW if you're wise.

CENTURY MOTOR VEHICLE COMPANY, Syracuse, N. Y.

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THE STEARNS CAR.



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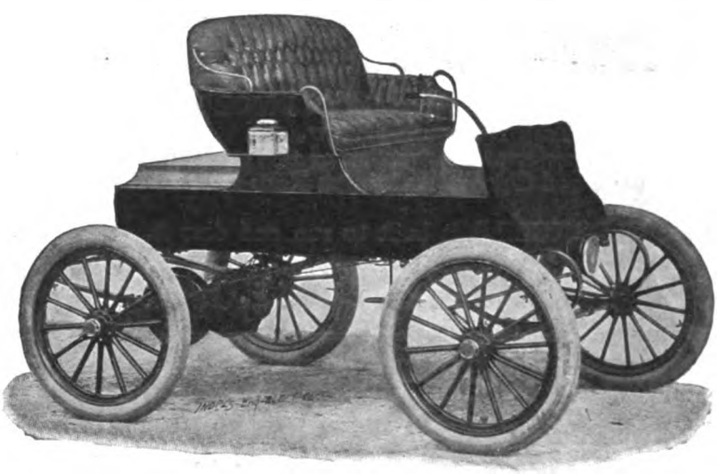
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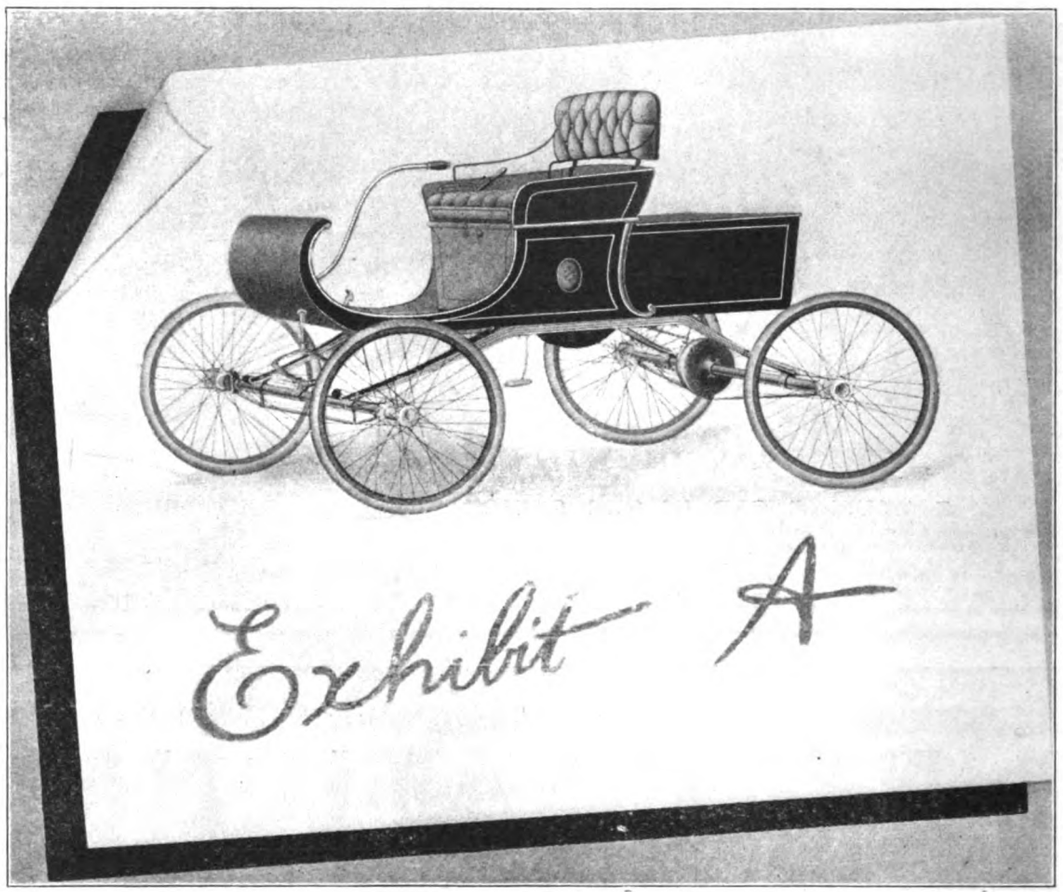
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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, January 15, 1903. No. 16

FOR COMMERCIAL CONTEST

A. C. A. Committee Makes First Definite Move and Fixes Meeting for Next Week—Those Invited to Attend.

After much deliberation it has been positively decided by the Automobile Club of America to hold in the spring a contest for commercial vehicles. This having been agreed upon, the contest committee of the club has prepared a letter and sent it to all known makers of self-propelled trucks, delivery wagons and other commercial vehicles asking for their co-operation. The letter calls upon the manufacturers who approve of the idea and are willing to aid to meet the committee at the rooms of the automobile club, No. 753 Fifth avenue, New York, on the afternoon of January 22 at 4 o'clock. As the date set falls during the week of the show the attendance at the meeting should be representative and the project set well forward.

What the committee wants are suggestions concerning the plan and scope of the contest and the rules under which it should be run. There have been a couple of minor contests of this sort in England, where the vehicles competed in classes, each with a proportionate load over a fixed distance, with points deducted for stops, but it is the aim of the club committee to arrange, if possible, something more satisfactory than anything done hitherto.

Those invited to attend the meeting are as follows: Morgan Motor Co., Motor Truck & Vehicle Co., Vehicle Equipment Co., Electric Vehicle Co., Mobile Company of America, White Motor Truck Co., Thorp, Plait & Co., Chicago Motor Vehicle Co., Fournier-Searchmont Co., International Power Co., Jenkins Auto Co., Adams Express Co., Engineering Company of America, Daimler Mfg. Co., Upton Machine Co., Trumbull Mfg. Co., Fischer Motor Vehicle Co., H. Bartol Brazier, Manhattan Transit Co., International Motor Car Co., White Sewing Machine Co., Thorneycroft Steam Wagon Co., Paul White Engineering Works, Desberon Motor Car Co., Milwaukee Automobile Co., Massachusetts Steam Wagon Co., S. D. Sturgis & Bros., Union Motor Truck Co., American Bicycle Co., Locomobile Company of America, Stanley Mfg. Co., Edward S. Clark, Foster Automobile Mfg. Co., Conrad Motor Carriage Co., Stearns Steam Carriage Co., Grout Bros., Winton Motor Carriage Co., Loomis Automobile Co., St. Louis Motor Carriage Co., Chicago Motor Vehicle Co., F. B. Stearns & Co., A. L. Dyke, Knox Automobile Co., National Vehicle Co., Woods Motor Vehicle Co. and American Electric Vehicle Co.

Panhards to be Assembled Here.

Panhard automobiles are to be assembled in this country for the American market. The negotiations to this end have been concluded with the Panhard & Levassor Co., of Paris, by A. C. Neubauer, the representative of Smith & Mabley, of New York. Smith & Mabley are to do the assembling work. The complete motors, gears and parts comprising the chassis are to be imported and assembled in a factory whose site will probably be near New York. The bodies are to be built by J. M. Quinby & Co., of Newark, N. J. Under contract with the French company the machines must bear the Panhard & Levassor Co.'s name plate, and be identical in every respect with their car as delivered abroad.

Another Dividend for Gasmobile Creditors.

Another dividend of 5 per cent. has been declared, and is to be distributed among the creditors of the Automobile Co. of America. At Newark, N. J., on Tuesday, Vice Chancellor Stevens, on the application of Chauncey B. Parker, signed an order authorizing Henry C. Cryder, receiver of the Automobile Co. of America, to make the distribution. The Court also allowed some small claims as preferred that had been contested.

Riggs Joins Metzger.

Frank C. Riggs, for many years prominently identified with the cycle trade in Rochester, N. Y., has associated himself with W. E. Metzger, the well known Detroit automobile dealer, and henceforth will take an active interest in the latter's big retail emporium. Mr. Riggs is a clean-cut, energetic, likeable man, who can scarcely fail to make his influence felt in his new position.

FOUR ARE RENOMINATED

N. A. A. M. Names Four Retiring Directors to Succeed Themselves—I. H. Page the Only New one Chosen.

Five members of the executive committee of the National Association of Automobile Manufacturers are to be elected for the three year term at the annual meeting of that body on Saturday morning, January 24, at Madison Square Garden, New York. The full executive committee consists of fifteen members, of whom five were originally elected for three years, five for two years and five for one year, so that each year the term of one quintet expires.

In conformance with the provisions of the constitution and bylaws, the present executive committee met on Wednesday of last week and renominated all except one of those whose terms are about to expire. The nominations were: H. Ward Leonard, Ward-Leonard Electric Co.; Windsor T. White, White Sewing Machine Co.; Lucius T. Gibbs, Vehicle Equipment Co.; F. S. Fish, Studebaker Bros. Mfg. Co., and I. H. Page, J. Stevens Arms &Tool Co. The first four are renominations. I. H. Page is named to succeed W. C. Baker.

At the same meeting new members to the organization were elected as follows: Active—Ajax Motor Vehicle Co., New York, N. Y.; General Automobile & Mfg. Co., Cleveland, Ohio. Associate—The Badger Brass Mfg. Co., Kenosha, Wis.; the New York Edison Co., New York, N. Y.; the Fisk Rubber Co., Chicopee Falls, Mass.; the K. Franklin Peterson Co., Chicago, Ill., and the F. W. Devoe & C. T. Raynolds Co., New York, N. Y.

A special committee was appointed to consider suggestions made for the standardizing of lamp brackets.

The revision of the constitution and bylaws received lengthy consideration, and several amendments were drafted which will be submitted to the members at the annual meeting.

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FOURNIER FULL OF NEWS

Devoid of Press Agents' Challengers, he Brings Over a Budget of Interesting Information.

"For business," was the reason of his coming to America given by Henri Fournier on his arrival last Monday. He proceeded to get down to business by getting into touch with the newspaper men right on the steamship dock. Before the Bretagne was fairly lashed to the dock Monsieur Henri had issued a challenge to Alex Winton for a race on the Empire trotting track, and under the influence of the same inspiration he went on and said that he would race Barney Oldfield, or any one, at any time, if the purse was big enough, and that he would bring over the new 120 horse power Moro freak racing machine he is having built for the Bennett cup race, to contest against the car of Winton or Oldfield.

After throwing out this grand "defi" to the wide, wide world, Fournier went to the Cafe Martin, and in his rooms there he and his business partner, M. Edouard Rabourdin, held a reception for the newspaper men, and told all about the cars they were bringing over to delight the simple American folk. In consequence the New York morning papers of Tuesday burst forth with skyrocket articles on the arrival of the "Great Chauffeur." He could not have been better heralded if he had been a wild beast show with a staff of press agents.

After telling all about the machines he will show here, Fournier took out his hammer and exercised a while on M. Augieres, who beat his record for a mile on the Dourdan course. Then, in the course of a general chat, he released some interesting information.

The Mors machine which W. K. Vanderbilt is having built for his use in the Paris-Madrid race on May 24, according to Fournier, will be similar to his own racer in style, but of twenty horse power less. D. Wolfe Bishop is having a duplicate of the Vanderbilt machine made for use in the same race.

Fournier's machine was described by him with much graphic gesturing to illustrate its shape. It will have a four-cylinder engine of 120 horse power, four speeds and a direct drive on the high speed. The rear wheels will be fitted with a new style of pneumatic tire that is guaranteed to be proof against puncture for 2,000 miles. To tell of its shape Fournier said:

"It will be like a boat, only wrongside out."

Then he put the palms of his hands flat together, with the finger tips in front, saying: "Sharp so in front; then back about forty inches, so [spreading his hands so as to make them convex on top, like the forward part of a round botto ned boat] then like this [indicating the underside of an overturned flat-bottomod boat] back to where I am. It comes about here on me [indicating his nose]. Behind me, it goes far back and in slowly, yes, yes, tapering, that is it; but very long behind. No, not like the Baker torpedo; we have beat that. It is more blunt in front. The sharpness is only a little at the end—prow, yes. It is found that what is good for the resistance through the water is good through the air. After you break the air it comes rushing in behind and helps to push you, so that is why you want a short front and a long tail, like a fish."

Fournier expressed great confidence that the Bennett cup race will be held in France, in conjunction with the Paris-Madrid race on May 24, and over that part of the course lying between Paris and Bordeaux, a stretch of 585 kilometres, or 362.28 miles, plenty long enough and to spare for the cup course. The distauce from Paris to Madrid is 1,600 kilometres, or 993.28 miles. The first day's stage of the race will be from Paris to Bordeaux, the second from Bordeaux to the frontier line, and the third from the frontier to Madrid.

Asked who would be in the race to represent the different countries, Fournier replied that Germany would have Camille Jenatzy and Baron de Caters. They will drive specially built Mercedes racers of 100 horse power. When told by Jenatzy what was wanted the head designer of the Mercedes plant dubbed the machine an "Idiot," and by that name they will be known, according to Fournier. Fournier evidently has great respect for Jenatzy, and he launched into praises of him as being a pioneer record breaker and doing a nervy and wonderful thing when he went out three years ago and made a mile in less than a minute with his electric car, "le Jamais Content." The English Napiers, Fournier conceded, would be managed by S. F. Edge and Charles Jarrott. With regard to the representatives of France he said: "Well, Fournier for one, and I guess the others will be the Farman brothers, Henri and Maurice. They will drive Panhards and I my Mors."

Chatting at random, Fournier corroborated the news printed in The Motor World last week concerning the Mercedes of 1903. It was true he said, that the regular touring car pattern would be of 60 horse power and built lower. He dwelt ecstatically upon the new electrically regulated speed clutches, the rights to which have been bought by the Laimler concern. This permits of the speed changes being made with the utmost graduation and as simply as by pressing a button. Fournier says that just before he left France the Di Dion people bought a license to use this electric clutch.

Speaking of "Augieres," the "Paris merchant" who beat Fournier's record for a mile and now holds the world's figures of 46 seconds, Fournier explained that the name is not a nom de plume, as was reported, but that the man is a Parisian jeweler, whose correct name is Emil Augieres. Then the hammer was unsheathed. All Augieres ever has done and can do, according to Fournier, is to drive a mile straightaway, and "Pooh! That is nothing. Any one can sit still when there are no corners to turn, no bumps, and no balancing to be done. He was in all the big races, first the Paris-Bordeaux, the Paris-Berlin, the Paris-Bordeaux again and the Paris-Vienna, but he never went more the twenty-seven miles. He either would break down or 'fall down.' Any one is liable to break down, but falling down is different. He is good for a mile on a straight road—viola! Poof!"

On the St. Louis and the Cymric, both due here this week, Fournier said he had five cars. Two are Renaults, each of 9 horse power. One is on the pattern of an English cab and the other is a landaulet with a swing top that permits of the passenger seats being inclosed or left open. Another is a 1902 Mercedes of 40 horse power, a double phaeton with the entrance in front, King of the Belgians seats and finished in pearl gray. The fourth car is a Mors of 18 horse power, of triple phaeton pattern with a very low frame and a seating capacity for seven persons. The most interesting of all if the fifth car, a combination of gasolene and electric power, known in France as the "Mixte." The car Fournier brings is one of the original lot made by Lohner & Porsche, of Vienna, who have since sold the patent rights to Panhard & Levassor. A gasolene engine of 28 horse power drives two dynamos, and the electric motors are so much a part of the front wheel hubs that no chains or gears of any sort are necessary. The Frenchman thinks this car will make a hit here. It is started by a switch, and has a speed of forty-eight miles an hour.

Fournier's press agent challenge to Winton was seized upon with avidity by the saffron journals and telegraphed by the papers to Winton, who replied that he was too busy. It was plain that Winton knew better than to take it seriously. Naturally Barney Oldfield was next turned to, in order to continue the story.

Incidentally Fournier mentioned that he had not received the cup for his mile in 51 4-5 second on the Coney Island Boulevard. Incidentally, also, it is mentioned by an official of the Long Island Automobile Club that the club never has received Mr. Fournier's entry fee for that contest.

Date Set for Paris-Madrid.

The date for the Paris-Madrid automobile race has been fixed for May 24.

The Automobile Club of France will begin receiving entries on January 15, which will be continued up to April 15, after which date the fee will be doubled. The final closing of entries will be on May 15.

The Automobile Club is organizing a competition for improved timing apparatus and will give a prize of one thousand francs and medals. Apparata must be submitted to the club by February 9.

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SCARITT ENTERS THE TRADE

Becomes President of the Pan-American Co.—His Election in Nature of a Surprise.

One of the most interesting pieces of news of the week came out Wednesday, when it was announced that Winthrop E. Scarritt had been elected president of the Pan-American Motor Co., makers of the Panam cars.

As was told in the Motor World last week, this company has been undergoing something of a reorganization. The capital stock has been increased and the machinery and tools of the Automobile Company of America purchased. The capital was raised from $100,000 to $500,000, and James E. Woodbridge, formerly with the Pratt & Whitney Co., Hartford, Conn., was made vice-president and general manager. It was not generally known, however, that Mr. Scarritt was even a stockholder in the concern until the announcement of his election to the presidency was made.

The Pan-American Co. was organized early in 1902 with A. C. Bostwick as a stockholder and supposedly the possessor of the controlling interest. Its product for the first year was small, and it has attracted little attention, but from the recent proceedings it is evidently to be reckoned upon in the future as an important factor in the industry.

The new president carries into the office the sagacity, alertness and nervous energy of a successful Wall Street man. He is one of the members of the brokerage firm of Chapman & Co., of No. 80 Broadway, New York. Besides being a wide awake, practical business man, Mr. Scarritt will have the advantage of a broad acquaintance with the automobile pulse of the public and an intimate knowledge of the prevailing sentiment. This he has acquired as a practical automobilist who has been actively identified with the development of the motor vehicle both in its sporting and social uses. He is one of the governors of the Automobile Club of America, has served on various committees, and is president of the American Automobile Association. It would be difficult to pick a man better qualified to direct the policy of an automobile manufacturing concern.

Smith Heads new Company.

One of the latest comers in the automobile field is the Premier Motor Mfg. Co., which has been organized at Indianapolis, Ind., with a capital of $50,000, to build gasolene cars. The moving spirit in the enterprise is Harold O. Smith, until recently vice-president of the G & J Tire Co., who becomes president and manager of the new company. Matters are in such a forward state that it is expected that a car will be ready for exhibition at the Chicago show.

Whipple Gets a Cup; Also Adams.

It was a jolly and congenial party that assembled at Café Martin last Saturday night, the occasion being the presentation of a silver loving cup to Harlan W. Whipple in commemoration of the New York-Boston reliability run and as a slight token of the esteem and affection in which that prince of good fellows is held. Winthrop M. Scarritt was toastmaster, par excellence, of course, and many and felicitous were the remarks that went round the board.

The surprise of the evening came when W. J. Stewart, in a witty speech, presented George B. Adams with a burlesque cup, a large porcelain one, with a handle on one side only. This gift quite overwhelmed Mr. Adams, who insisted, however, that it be filled and passed around, as had been the case with "Whipp's" cup, which was finally done amid much amusement.

Those present beside Mr. Whipple were Edgar R. Reets, Charles McK. Looser, George B. Adams, William H. Remick, J. E. Knobland, Richard A. Streit, A. J. Rice, W. J. Stewart, J. B. Stewart, E. E. Schwarzkopf, T. M. Hilliard, Roland R. Conklin, Angus Sinclair, Winthrop E. Scarritt and Frank W. Roche.

Receiver for German-American.

John C. Coleman was on Tuesday appointed receiver of the German-American Automobile Co., upon the petition of its treasurer, James McNaughton.

There has been a quarrel among the officers and directors and litigation has resulted in order to determine the rights to the possession of the books and other assets. The issues were tried before Francis K. Pendleton, as referee, and he has made no report.

According to the petition of the treasurer, the assets include a finished automobile, valued at $2,500, and a quantity of parts of machines. The company has temporary offices at No. 25 Broad street, New York. William H. Brearley is president, Thomas H. Gillespie, secretary. It made a gasolene car, but had never got much beyond the experimental stage.

Kimball and Fournier Complete Deal.

It was announced on Tuesday that a deal had been consummated between Fournier, of the Paris Automobile and the Central Automobile Co., of No. 1,684 Broadway, New York, whereby the latter will hereafter be the exclusive representative in America of the Paris concern, which deals in Mors, Mercedes, Renault and Panhard cars. This deal was begun in Paris when E. T. Kimball, of the Central company, was there, and only the final terms of the contract remained to be completed here. Two Mors cars that were at the Paris show are to be exhibited by the Central company at Madison Square Garden, while Fournier will show the special styles brought over by him, and the New York firm and the French one will work in harmony.

BIG ORDER FOR RIG CARS

Wanamaker Shows his Faith by Placing a Six-Figure Contract for Searchmonts.

It was the privilege of the Motor World man last week to see a contract executed between the Fournier-Searchmont Automobile Co., represented by W. D. Gash, general manager, and John Wanamaker, which is unusually interesting for several reasons. In the first place, it was probably one of the largest bona fide contracts for big cars yet placed in this country, and illustrates the extent to which one large mercantile establishment is going into the business and the faith reposed in the Searchmont car, which has been selected as the leader.

Not less interesting is the fact that the contract is absolutely "clean." It calls for no accessories or sundries whatever, being a straight agreement to take over $100,000 worth of automobiles in a given time under the regular warranty of the N. A. A. M., and expressly stipulates that no sundries or extras are to be included. The responsibility of the manufacturers ceases with the placing of the goods on board the cars at the factory.

In addition to the contract named above a supplementary option for a large number of machines, almost identical with the contract, with the exception that it leaves the purchaser free to cancel the second order before March 1, shows that the Wanamaker establishment expect to dispose of even more machines than the large number contracted for. It is encouraging to the automobile industry to note facts like the above, and, of course, a large sized feather in the cap of the newly appointed manager of the Searchmont Automobile Co.

Chance for Remington.

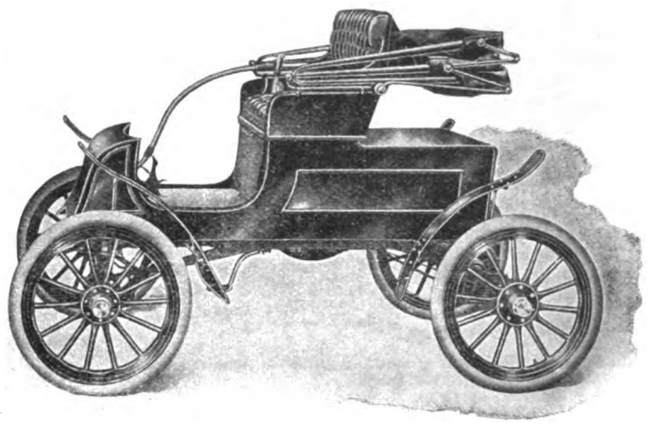
There appears to be a good prospect that the business of the Remington Automobile & Motor Co. will be continued. At a meeting of the stockholders, held last week, reports were made as to the inventory and as to the attitude of the creditors. The two largest creditors were present. It seems practically assured that the creditors will consent to a reorganization plan, and the stockholders present voiced their approval by vote. The whole matter was discussed at length, and a very thorough understanding reached. It was voted to direct Charles H. Searle, as attorney, to draw up the necessary legal papers for stockholders and creditors to sign. As soon as they are ready they will be circulated.

Porter Battery Again Beaten.

In a decision handed down last week the United States Circuit Court of Appeals again sustained the Brush storage battery patent, owned by The Electric Storage Battery Co., and affirmed the injunction granted by Judge Hazel of Buffalo againt the Porter Battery Co.

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And Kindred Interests

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NEW YORK, JANUARY 15, 1903.

This Show and the Next One.

The show's the thing.

There have been other shows, but none so thoroughly "the thing" as this one. No display that has gone before is comparable with it, and with every available inch of exhibition space occupied, it is difficult to imagine how there can ever be a greater one.

If the show is to become an annual fixture, either exhibits must be contracted, Madison Square Garden enlarged or the scope of the affair altered. From certain viewpoints the latter is the best way out of the difficulty, as we believe will gradually dawn on those most concerned.

A. A. A., A. M. L. and A. C. A.

During next week the American Automobile Association and the American Motor League both will hold their annual meetings. Each has issued an appeal for support, that of the A. A. A. being pitched in a particularly high key.

Both organizations might, however, profitably ask themselves what they have done and purpose doing to merit the support which they seek. If we view their respective records of the past year we find that all that the Association did was to indorse the oft-mooted scheme of a transcontinental highway, while the League fought the case of an automobilist on Long Island.

The objects of both organizations are the same. One stands merely for the clubman, the other for the automobilist at large. What is good for the one individual is, however, good for the other. A scattering of fire and division of energy does not serve to bring about effective accomplishment.

To our mind there is room for but one organization, and short of the amalgamation of the League and the Association neither is likely to amount to the proverbial row of pins. Nothing is gained by disguising the fact or closing one's eyes to it. One able bodied organization is better than two lame ones, such as now exist. False pride or narrow views should not be permitted to block the way.

More than this, and whether or not an amalgamation is brought about, it is necessary if either the League or the Association, or both, is to serve its purpose, that an understanding be reached with the Automobile Club of America. Despite its name, the club is essentially a New York body, but one that undeniably occupies the centre of the national stage. It has largely taken to itself the promotion of events and conduct of affairs that more properly come within the spheres of the A. A. A. and the A. M. L.

That the A. C. A. will relinquish its place at the footlights is difficult of belief, but that does not affect the fact that the League and the Association must overcome their listlessness and live more than a nominal existence if they are to grow and prosper and command the attention and respect of the public.

Some Men on Some Stands.

At previous shows there has been a great deal of dissatisfaction expressed at the attitude of no inconsiderable number of stand attendants.

These lordly gentlemen appear to be under the impression that they are paid to look pretty, to ogle all the attractive looking girls who come within their purview, and to rebuke the temerity of people who come to them for information regarding the cars shown on their stands.

Some of them are incompetent, others merely indifferent. Which is the more aggravating it is not altogether easy to say; but certainly both types are unprofitable. The man who does not know anything about the internals of the cars he is supposed to extol, and is therefore unable to perform his part of the contract entered into between his employer and himself, has a reason for his unprofitableness, if not an excuse. But his companion who is better equipped, and yet makes no better use of his knowledge, is more blameworthy at least. "The bird that can sing and won't sing should be made to sing."

Now that the automobile industry has settled down to businesslike ways, and the spreadeagleism of past years is no longer in evidence, it is fitting that the evil complained of should be eradicated also.

There was less complaint at the last show than at the one of 1900. A further improvement would be both timely and welcome.

The Commercial Vehicle Contest.

Nothing more sensible nor of more vital interest to the automobile industry at large has been done of late than the decision of the Automobile Club of America to arrange a contest for commercial motor cars. It is to be hoped that the manufacturers of such vehicles and the owners of them will see the value of the proposition and respond freely to the invitation to come forward with suggestions.

As the commercial draught vehicle is in the main employed for city traffic, it will at once occur that any contest which leads the cars simply over a stretch of rural road would not be eminently satisfactory. What the merchant wants to know about draught automobiles is how much more work they will do than horses and at what cost. The efficiency of a truck or delivery wagon in the city depends to a certain extent upon the facility with which it can be stopped and started in crowded streets, and upon the ability of its driver to make the most of the opportunities that offer.

In consideration of these things the idea suggests itself that a part of the course the metropolis. In order that all might find the same or similar conditions, the city part of the course should be covered first, should include some of the busy streets of as otherwise the competitors would be apt

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to be straggling through at different times and not find the same volume of traffic.

This plan, while desirable, is open to some serious objections. One of these is that on a working day, when the streets would afford the conditions for a good test, the owners of delivery wagons and trucks would need them in their business and be unable to spare them for any contest. As the manufacturers of such vehicles have not yet reached the stage where they have stocks on hand, but are building to order, it is natural to suppose that vehicles in actual service would have to be borrowed by the makers for the contest or else entered by the firms owning them. This would perforce compel the committee to hold the contest on a holiday. Another objection that might be raised to the plan of running through city streets is that a number of contestants would of themselves crowd the thoroughfares so that the test would not be one made under normal conditions. If the competition was held on a holiday this objection would lose its validity, and at any rate the idea of including streets having different sorts of pavement, instead of a plain macadam road, is one that would, if adopted, make the fairest all around test.

A well known firm of brewers that has adopted some electric trucks recently made tests for its own information, and found that the motor wagons could carry a bigger load and make a trip three times a day over a certain route that the horse drawn trucks could cover only once. This was a test of the most practical sort. It yielded just the information desired, and all that remained for the brewery firm to do was to figure out the difference between the maintenance, cost of horse trucks and the motor moving ones and then determine their relative value in work accomplished by rule of three.

This test suggests another thing which it would be well to do, but which unfortunately would involve a great deal of trouble and carry the contest committee into complications beyond its scope. The idea suggested is that of having the motor vehicles competing compared by practical test with horse drawn trucks, load for load and distance for distance. The superiority of the self-propelled cars would make a lasting impression if this could be done. And it might be. It would require only one horse drawn vehicle of each class, say, four or five, to show what they could do under the same conditions as the automobile.

Whatever is decided upon, the rules fixed should be such as would bring the vehicles into competition under practical work-a-day conditions. Such a test can be made of great practical value, a help to those hesitating between the horse and the horseless truck, and an encouragement to what in the future is certain to be the most substantial part of the automobile industry.

Good Roads and the Brownlow Bill.

All the world agrees that good roads are good things and deserve to be pushed along. But when it comes to the how and why—by whom the pushing shall be done and in just what manner—differences at once arise and ardor cools perceptably.

Theoretically all good citizens are in favor of road improvement. Even the farmers—those close-fisted sons of toil who formerly viewed the movement hostilely, seeing in it only a design on their pocketbooks—have come round and are taking a saner and more sensible view of the matter. A little practical demonstration of the benefits to be derived from broad, smooth and solid highways has brought about their conversion.

But in spite of the fact that a beginning has been made, it is only too plain that it is the feeblest of feeble beginnings. Our country is huge, its area vast, its distances stupendous. To link State to State, city to city, village to village, as has been done by the steel rails, and as must be done by stone highways before we can really round out our civilization, is a Titanic task, but one to which we must resolutely address ourselves, and the sooner the better.

A simple, comprehensive and wise plan to this end is contained in the Brownlow bill, now before Congress. It sets on foot a systematic agitation for good roads, devises ways of insuring that they will be right, and, most important of all, provides some of the means for obtaining them. Even twenty millions of dollars is an insignificant sum—a mere drop in the bucket—compared with the milliards that must eventually be expended for the purpose, but it serves to start the ball to rolling, to dignify the undertaking, to insure the continuance of the movement once it is inaugurated.

The bill has been widely and favorably noticed. There is strength behind it, and but little opposition. To crystalize the former and bring it to bear in some concrete and effective form, so that it will impress our legislators with a sense of its force and reason is the task now before us.

To its performance all friends and advocates of decent highways—and they certainly include all automobilists—should devote their energies.

Aid in Instruction.

It would seem to be a good plan for firms who make a specialty of giving lessons in driving to fit the cars used for instruction purposes with duplicate pedals and brake lever. The instructor, sitting by the side of the novice, can always correct the steering, if necessary, but there are times when the safety of the car and its occupants would be considerably increased if he could also apply the brakes.

The time when this sort of control would be so valuable would be just after the tyro had begun to think he could drive. Many when they have learned to steer and to work the pedals and to change the gears are apt to think that they have acquired the whole art of driving, and instead of jogging along quietly for a few days till every action becomes automatic, they put on the pace very early in their career. Luckily, they usually scrape through all right, but they are very apt to forget at the critical moment some vital action, such as the depressing of the brake pedal or the application of the side brake, or, at any rate, they do not take instant steps to check the car, and an appreciable amount of time is lost in doing what they should instantaneously do. This is where the prompt action of the instructor, with his duplicate pedals and brakes, would be of the greatest service.

Of course, this duplicate control should only be reserved for teaching, as it would be worse than useless if fitted on an ordinary car.

It is the eve of the battle of the types. American and European, gasolene and steam, vertical and horizontal engine, motor front and motor back—these and a dozen other battles are about to be fought out once more. And the types are getting so inextricably commingled that it is no longer an easy matter to tell t'other from which at first sight.

For nigh one hundred years rails have absorbed all the energy and money the people of this country were able or willing to devote to the development of wheeled vehicles. Turn about is fair play, and the automobile bids fair to set fairly in motion a movement that will not halt until public stone roads rival those private ones of steel that are the marvel of the century.

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THE FORESHADOWS OF THE SHOW

GREAT GROWTH OF THE INDUSTRY WILL BE MADE EVIDENT, BUT NO MARKED TENDENCIES, DEVELOPMENTS OR INNOVATIONS ARE IN PROSPECT—RADICAL ALTERATION IN BODY DESIGN OF TWO STEAM CARS ONLY APPROACH TO THE SENSATIONAL—GASOLENE DOMINANT AND FOREIGN INFLUENCE STRONG—WHO'LL BE THERE AND WHAT THEY'LL DISPLAY.

When, on Saturday night, for the third time, the doors of Madison Square Garden open for an automobile show, it will be seen that the industry had been shod with Seven League Boots, and has made all possible use of them during the past year and a quarter.

No evidence of material prosperity and progress will be found lacking. The show is a bigger and better one than would have seemed possible in the earlier stages of the business. The huge building that has housed so many imposing exhibitions, and that is the city's show place par excellence, has thus early been found inadequate for the accommodation of an industry that is still in its infancy. By dint of going upstairs and down—the boxes and the basement being alike levied upon—the influx of exhibitors has been provided for in some fashion. But what of next year, and the ones to follow?

It has taken only three years for this congested condition to be reached. The first show, held in 1900, was a tentative effort, no one being quite sure that the industry had advanced sufficiently to warrant such a show or make it successful. There were but 28 manufacturers showing, and of the number 8 had withdrawn from the field within a year. Nevertheless, these 28 concerns, with a fair sprinkling of parts and sundries people, made such a good showing, and the innovation was received with such favor, that the experiment became at once a permanent institution.

Although the next show, that of 1901, did not undergo any remarkable increase in size, there being but 36 makers represented, an increase of but little more than 25 per cent, it settled definitely, the matter of shows. They were to be continued; that was certain. The date was pushed forward from November to January, and the management vested in the N. A. A. M., the A. C. A. and the Madison Square Garden Company, thus securing united support.

Figures best show the tremendous growth that has taken place in exhibitors at this year's show. There are 76 makers, or their representatives, showing complete cars, an increase of over 100 per cent. Of these one shows electric, steam and gasolene cars; one electric and gasolene, seven electric, twelve steam, and sixty gasolene. In addition, there are ten concerns showing tires, and fifty-seven showing fittings, supplies, sundries, etc. In all the exhibitors number 143.

There is cause for both regret and congratulation in the fact that the present show more than any other has had its principal novelties described and illustrated, and sometimes exhibited, in advance.

Some of the cars were kept inviolate until the immediate pre-show time; then the secrecy was withdrawn and the public given a view of the new models. The White and Grout steam cars—both of them little short of revolutionary in their design—are conspicuous examples of this. Many others, including a considerable number of gasolene cars, have been shown or described in the regular way, and their chief features made known.

In consequence of this unusual publicity, those who attend the show will go there with some knowledge of the majority of the cars, and with the intention of making a closer examination. Their task will be, not so much to learn what is new, as to examine that which they are already partly acquainted with. If the freshness of their appetite is gone, the preliminary glimpses of what is to be shown have made them more discriminating and, in some cases, intelligent. At the same time this publicity has advertised the show and aroused curiosity that can only be satisfied when the doors open on Saturday night.

Fixtures of the Week.

Tuesday, January 20—Annual meeting American Automobile Association.
Thursday, January 22—Annual meeting American Motor League.
Thursday, January 22—Automobile Club of America meeting with manufacturers of commercial vehicles.
Friday, January 23—Annual banquet National Association of Automobile Manufacturers.
Saturday, January 24—Annual meeting National Association of Automobile Manufacturers.
Saturday, January 24—Annual banquet of the Automobile Club of America.

To assume, however, that there will be no novelties—nothing that has not already been exploited—is to go much too far. Inquiries made reveal a number of unexpected changes, hints of which are given in the appended stand-to-stand forecast. Late as the show is, by comparison with previous ones, it comes too early for some makers, and models have been rushed through for it or the effort to get them here in time abandoned. There is little reason to doubt, however, that there will be many genuinely interesting cars in addition to those already noticed.

Outside of the cars themselves there is a vast field, and one almost entirely uncanvassed. For the intelligent worker in it there is certain to be found in the many exhibits of fittings, sundries, etc., much that will repay study.

In the present show there are but twelve steam makers, or practically the same numbr as were found at the last show, although the number of makers in the present exhibition has more than doubled.

But this is far from being all. Five of these twelve steam makers also manufacture gasolene cars, viz., International, Century, Stearns, Conrad and Locomobile, and a sixth, Mobile, is at work on one. With one exception, the International, all these concerns have added gasolene cars since the last show. Furthermore, three steam makers showing previously, Steamobile, Steam Vehicle Co. and D. B. Smith & Co., have retired from business, and a fourth, Overman, has virtually followed suit.

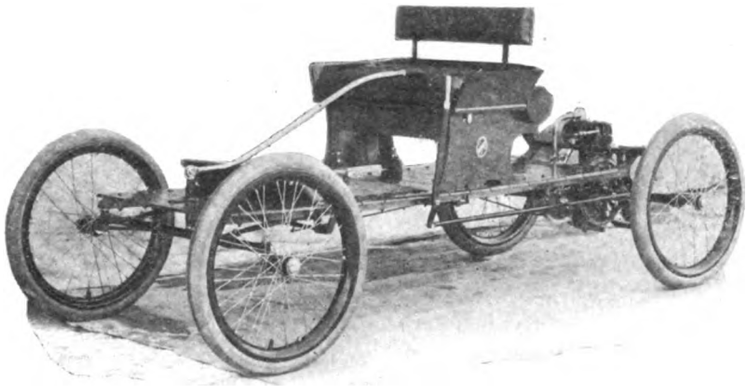
Damaging all this is, but it must be admitted that it quite overshoots the mark. The steam vehicle industry is not in such a parlous state as this would indicate.

While conceding this, it would be useless to attempt to conceal the fact that the last year has witnessed giant strides on the part of the gasolene car. It was the fashion then. It is even more decidedly the fashion now. The public evinces a great liking for the gasolene type of car. Makers see this, and, after a more or less strenuous resistance, bow to the inevitable and make, or

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prepare to make, gasolene cars. That is the upshot of it. Whether the tide will continue to run just as strongly in this direction or in time ebb is another matter. There may be predictions, but no one can speak with certainty. There is nothing to do but to wait.

Unlike the steam branch of the industry, that devoted to electric vehicles has prospered in every way. Those exhibiting at the show, seven in all, include one newcomer, the Studebaker. Covering a field entirely distinct from that in which the gasolene car finds a place, the vogue of the latter has not been disturbed at all.



THE WALTHAM BUCKBOARD.

Viewing as a whole the vehicles to be shown at Madison Square Garden, it is apparent that they cover a much wider range than ever before. There are lower priced cars, as witness the new Waltham at $500, as well as more costly ones, the extreme in this direction being the Electric Vehicle Co.'s gasolene car, priced at $5,000, while cars at $3,000 and $4,000 are not at all unusual. But at the same time the popular priced cars—ranging in price from $500 to $800—have increased in number and form one of the features of the show; not, indeed, to the same extent as at Chicago last March, but still one that will stand out prominently.

Weights have undoubtedly undergone a still further increase, although the Waltham car, in addition to being the cheapest, is also the lightest in the show, scaling but 350 pounds. But steam and gasolene cars have been strengthened almost invariably, and frequently given more power.

Coming to the cars themselves, the steamers undoubtedly bear off the palm in point of novelty, even sensationalism. The White steamer, with its gasolenelike exterior, has already been described and illustrated in these columns. A fitting companion to it is the Grout steam tonneau, now shown for the first time.

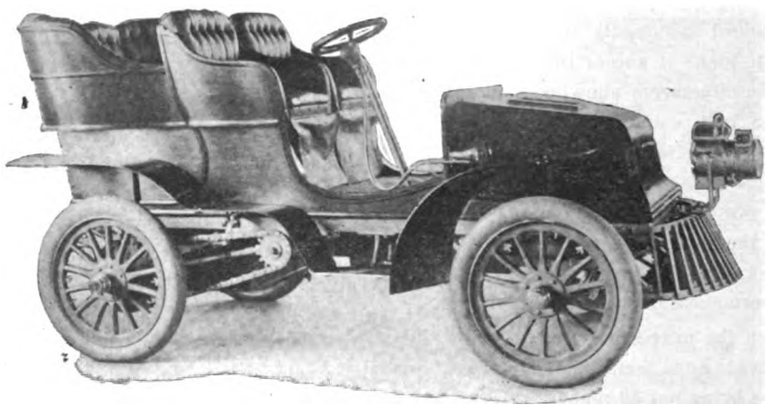
A rectangular frame of heavy angle iron supports the boiler placed forward under a bonnet, and an engine positioned horizontally under the foot board. The power is transmitted to a jackshaft containing compensating gear, thence to the rear wheels by chains. This construction permits the use of a dead axle of very heavy construction, and a dish to the rear wheels similar to that on the front ones.

The car is equipped with a condenser, rendering it possible to run with but 10 or 15 gallons of water, although provision is made for a capacity of 53 gallons.

The gasolene tank is large, and the appliances include a steam air pump, steam water pump, forced draught, and water lift. The system of control is very good, and powerful brakes on rear wheel drums are fitted. The wheels are of the artillery type, with 32x4 inch tires and plain bearings.

The tonneau body is designed to seat five persons comfortably, and is upholstered in leather, with brass trimmings throughout. The car will take the steepest hills, and run at a very high rate of speed.

In addition to the White and Grout, the Toledo steam car is for the first time fitted with a condenser. By the use of a device of this kind wonderful economy with the water supply is obtained, and the inconvenience of having to fill the tank every few miles is obviated. The Toledo condenser is said to have been exhaustively tested and found to be all right.



GROUT'S NEW STEAM CAR.

The White touring car has a shaft and bevel gear drive; the Mobile has a new burner which is highly spoken of; and the Toledo has what is rather vaguely described as a new body on gasolene lines.

As was seen a year ago, the tendency to follow the design in almost universal use abroad for gasolene cars is still in evidence. The long wheel base, the bonnet in front, the wheel steer, the tonneau body—these are seen on probably a majority of stands. They may fittingly be termed the gasolene car type. Except in the case of the light runabout, which is really the distinctive American development evolved to date, the type mentioned is copied and acknowledged to be that wonderful thing "the fashion."

But it is frequently followed more in appearance than in reality. An inspection will frequently reveal that the bonnet is an ornament or a receptacle for water or gasolene tanks, as in the F. B. Stearns car, or that a horizontal instead of a vertical engine finds a place there, as in the Autocar.

In short, although the vertical motor is found on a number of cars that formerly owed allegiance to the horizontal type, the latter still finds more favor than was generally expected. A few of them are single cylinder, more are double. But the horizontal engine still has a commanding lead, and at the present rate it will take more than one year longer to oust it.

Cars like the International, the Peerless, the Berg, the Stearns, the Pope-Robinson, the Searchmont and the Moyea represent the foreign type, so called. These are costly, comfortable, substantial, the apogee of advanced constructional ideas. They contain many clever and ingenious devices and features, but outside of one or two square front, Mercedes type, bonnets, the exhibit shows no evidence of the Germanizing tendency so evident at the Paris show.

At the other extremity, with cars like the Olds, the Crest, the Rambler, etc., even greater simplicity has been sought after. Such are the diverging lines along which makers work.

One of the real novelties of the show will be a 350-pound two-passenger vehicle, listed at $500, and simple to a remarkable degree. It is the product of the Waltham Mfg. Co., and is termed the "Buckboard." The illustration gives a good idea of this automobile in miniature.

As the makers point out, the vehicle is the very simplest, lightest form in which it is possible to construct a motor vehicle. The power mechanism is as devoid of complexity as a motor bicycle or tricycle, notwithstanding which the Buckboard seats two persons side by side.

The motor is 4 horse power, and is air

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cooled by a very ingenious blower working directly on the motor shaft. The vehicle can be driven at all speeds from 4 to 30 miles an hour by a slight change of pressure on the foot throttle and movement of the spark lever at the left of the seat. It will climb hills up to 17 per cent. with two persons, and is in every way one of the most practical, and probably the lightest power vehicle in the world, the entire weight being only 350 pounds.

The vehicle has an exceedingly long wheel base, and the flooring or buckboard frame is very long and flexible, making it most luxurious. It is finished mostly in natural wood, highly polished, with maroon enamel and nickel plated trimmings. In fact, the machine throughout is a very rakish, stylish looking rig, splendidly adapted for every purpose where a fast, light mode of conveyance is required.

Although most of the exhibitors have "declared themselves" concerning what they will have at the show, it is natural to expect that a few surprises will be sprung, particularly by concerns hitherto unknown. Two of the novelties already known about are an electric runabout in miniature and a new style of steam fire wagon.

The electric vehicle is the property of George Gould's son, and will be exhibited by Cole & Woop, carriage makers, of No. 48 West Sixty-seventh street, New York, who built the body of the car. The clever little machine is only six feet long, four feet in height and three feet in width, but it will run twenty miles on one charge.

The fire wagon is the latest product of the International Fire Engine Co., Elmira, N. Y., and is a remarkable construction. It is not an engine such as is used to pump water through a fire hose, but is more in the nature of the salvage wagons run by the insurance patrol. The body of the wagon has seats on the side and a steel basket for axes and other implements. On each side is a brass cylinder about five feet long and a foot and a half in diameter, in which is stored under pressure a chemically made extinguishing fluid. At each end of these cylinders is a coupling for a hose.

The wagon has a steam engine, and is chain driven. There is a steam chest and pistons and a chain on each side, and it is said that a speed of seventy miles an hour can be attained by the wagon. The chassis is of steel throughout, and sustains in the rear the water and gasolene tanks. The boiler is in front, and hangs from the upper frame of the wagon. The wheels are only twenty-eight inches in diameter, of artillery pattern, extra heavy, and are fitted with two-inch solid rubber tires.

Until the show opens the display of fittings, accessories, etc., is an unknown quantity. There is much that is both new and meritorious, but it remains for the patient investigator to discover them on the spot.

There is no reason to doubt that such will be the case this year. Several kerosene burners—that much sought adjunct to the steam car—are announced, while gasolene burners have not been overlooked, such concerns as Forg, Kelley, etc., having improvements to show.

Commercial vehicles will be found to have made considerable headway. While this is true as to the delivery wagon class, as shown by the White and other productions, it is much more so of the heavier vehicles. The Electric Vehicle Co.'s truck is a marked example of this. Both makers and public are giving this matter more attention, and the difficulties incident to the operation of the vehicles are being more fully met than in the past.

There will be much that is new in the motor bicycles shown. Several, notably the Merkel and the Thomas, have been much changed, a spring frame and fork and a cushion frame having been adopted.

Summary of Exhibits and Exhibitors.

MAIN FLOOR.

Spaces 59 to 61—The Mobile Co. of America. New York—Eleven mobile steam cars, viz., special runabout, standard runabout, dos-a-dos, light surrey, heavy surrey, touring car, light delivery wagon, wagonette delivery, wagonette, coupe and victoria, the last three being entirely new models. Also parts and specialties. A new burner has been adopted. It has a flattened cylindrical chamber, pierced vertically by many one-half inch steel air tubes expanded into the tube plates in the same manner as in the boiler. Placed at intervals between these tubes and screwed into the top plate are numerous perforated raised steel tips. These tips elevate the flames above the top plate, and consequently prevent the overheating and warping of the plate and the burning off of the air tubes. Burners of this description are very economical.

The use of an automatic water level regulator and low water signal renders a water glass unnecessary. A steam air pump maintains pressure on the gasolene tank.

Space 62, Foster Automobile Co., Rochester, N. Y.—Foster steam automobiles.

Spaces 63 to 65, the Peerles Motor Car Co., Cleveland, Ohio—Peerless gasolene cars. Features, square bonnet and new style radiating tubes; transmission by universal shaft and bevel gears, hardened and mounted on ball bearings; the differential and bevel pinion are also mounted on ball bearings. The two cylinder vertical engine now develops 16 H. P. at 800 R. P. M.

Spaces 66 and 67, Packard Motor Car Co., Warren, Ohio—Packard gasolene cars. A new style of body has been adopted. The large single cylinder horizontal motor develops 12 H. P. and the transmission is of the sliding gear type, giving three speeds forward and a reverse.

Space 68, the C. J. Moore Mfg. Co., Westfield, Mass.—Westfield gasolene touring cars in three styles, 8, 12 and 16 H. P., respectively, fitted with two cylinder vertical motors. Loomis Automobile Co., Westfield, Mass.—Loomis gasolene cars. Features, a transmission that makes it impossible to clutch two gears at once, new cooling system, non-variable carburetter.

Space 69, Meteor Engineering Co., Reading, Pa.—Meteor steam cars.

Space 70, the Automotor Co., Springfield, Mass.—Automotor gasolene cars. These cars are of the tonneau body type, with vertical engine positioned in front under a bonnet.

Spaces 71 and 72, Olds Motor Works, Detroit, Mich, Olds gasolene runabouts.—The horsepower has been increased from four to five, wooden wheels substituted for steel ones, a new carburetter, a new and roomier body and stronger axles fitted. The single cylinder, horizontal motor has been retained, together with the Olds longitudinal leaf springs and other characteristic features.

Spaces 73 to 76, International Motor Car Co., Toledo, O—Toledo gasolene and steam cars and Waverley electrics. The gasolene cars are made in three models, 12, 18 and 24 H. P., respectively, fitted with 2, 3 and 4 cylinder vertical motors. A new governing system, working on a throttle in accordance with the best foreign practice, copper water jackets (on the 24 H. P.), a new radiating system, a general refining of details and an improved tonneau, with third seat in the back, are the principle features.

The Toledo steam car has been much changed, the particulars given out only whetting the appetite for more. A condenser designed on scientific principles is used for the first time. With it back pressure is entirely eliminated, even in going up hills, and a run of 38 miles has been made on one gallon of water. A new flexible frame and a new body, the latter being similar to that employed on gasolene cars, have also been adopted.

Spaces 77 and 78, Pan-American Motor Co., Mamaroneck, N. Y.—The Pan-Am. gasolene car, a 4-cylinder, vertical engine vehicle of approved modern design.

Space 79, Knox Automobile Co., Springfield, Mass.—Increased power and strength, a longer wheel base and wood wheels mark the Knox gasolene car. The single cylinder, horizontal air-cooled engine, with a fan as an auxiliary cooling device, has been retained.

Space 80, The Autocar Co., Ardmore, Pa.—Autocars, gasolene, have been much changed, the double cylinder balanced horizontal engine being retained, but placed forward under a bonnet of the usual type. Especial attention is called to the noiseless friction clutch and transmission gear, a positive pump drive for the water circulation, etc.

Spaces 82 to 85, U. S. Long Distance Automobile Co., New York—Long Distance gasolene cars are now equipped with 2-cylinder, horizontal motors and the planetary type of transmission, with bevel gear drive, gives three speeds forward and a reverse.

Spaces 86 to 89, White Sewing Machine Co., Cleveland, O—The White Touring steam car, an entirely new model, will be one of the features of the exhibition. In appearance it closely resembles the modern gasolene car, the engine being placed in front under a bonnet, the transmission being by shaft and bevel gears, and the body of the well known tonneau type. A compound engine, a condenser and the regulation White generator mark the car, while the lubricating and other automatic devices so well tested on the other White cars have been adopted in connection with this one.

Spaces 90 to 93, Smith & Mabley, New York—American C., G. & V., Panhard, Renault and other gasolene cars.

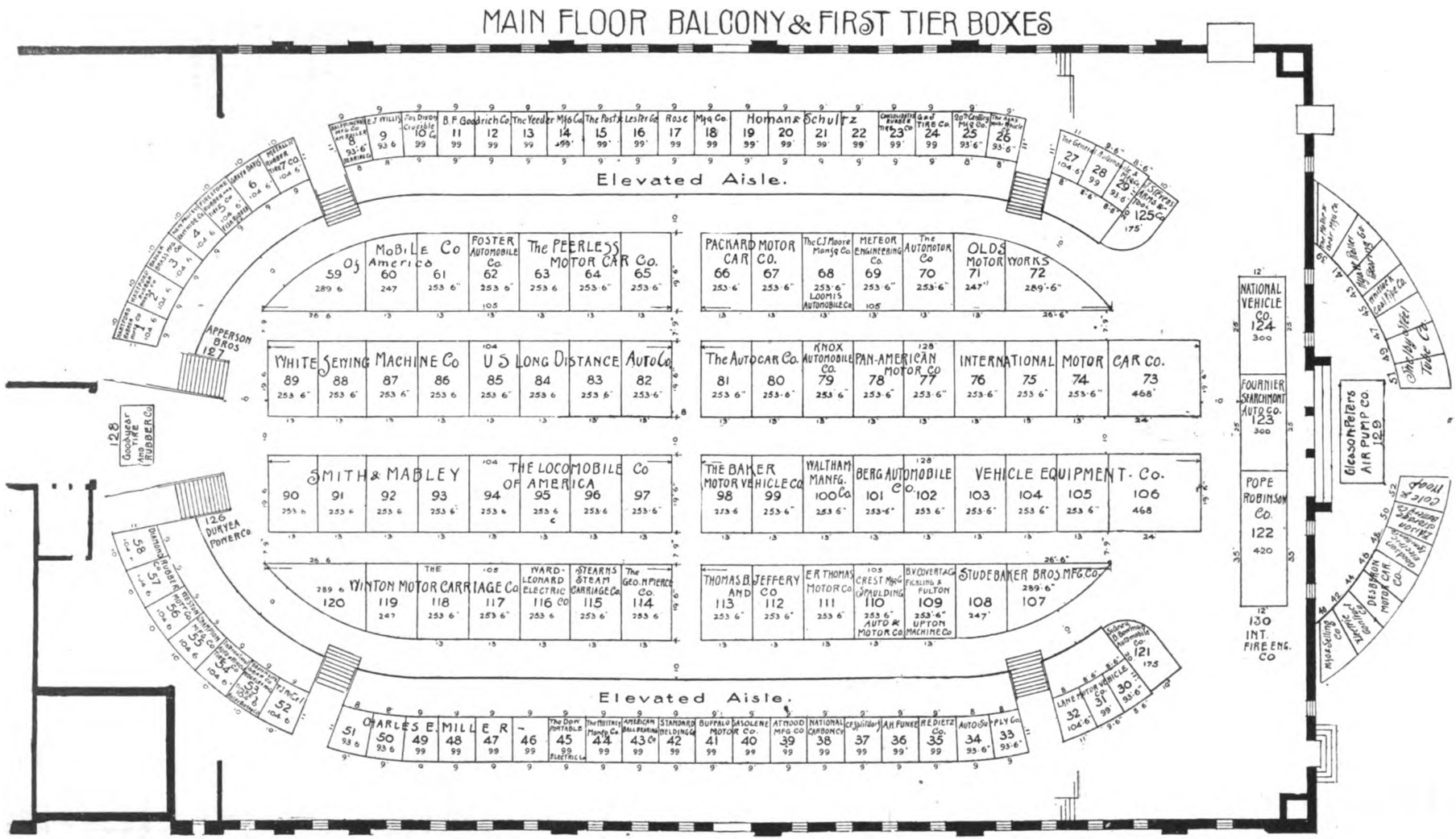
Spaces 94 to 97, The Locomobile Co. of America—Locomobile steam and gasolene cars.

Spaces 98 and 99, The Baker Motor Vehicle Co., Cleveland, Ohio—Baker electric vehicles, runabouts, imperials, stanhopes, etc. The beauty and distinctiveness that has always marked these vehicles has been even added to for the present season, and the combination of lightweight and ease of running is present to a greater degree than ever.

Space 100, Waltham, Mfg. Co., Waltham, Mass.—The Waltham buckboard, weighing 350 pounds and listing at $500, will be one of the features of the show. It carries two passengers, seated side by side, and is propelled by a vertical, air cooled motor.

Spaces 101 and 102, Berg Automobile Co., New York—Berg gasolene cars will be seen at the show for the first time. They are made in two models, 8 and 15 horsepower, respectively, and are of the multiple cylinder, vertical engine in front under a bonnet type, with sliding gear transmission. Features upon which special stress is laid are a new form of regulator, a mechanical lubricating device and a new control system.

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Spaces 103 to 106, Vehicle Equipment Co., Brooklyn, N. Y.—Commercial vehicles, broughams, coupes, etc., electrically propelled.

Spaces 107 and 108, Studebaker Bros. Mfg. Co., South Bend, Ind—Four styles of electric vehicles, all with tubular underframes, with motors centrally positioned and with the Exide batteries carried in a compartment at the rear. Other features are the side steer, half elliptic front spring suspension and accessibility of running parts.

Space 109, B. V. Covert & Co., Lockport, N. Y.—Covert gasolene runabouts, with combined clutch and brake sliding gear transmission. Fickling & Fulton, New York—Covert gasolene cars. Upton Machine Co., New York—Upton transmission gears.

Space 110, Crest Mfg. Co., Cambridge, Mass.—The Crestmobile, which has undergone considerable change. The single cylinder air cooled motor is carrier under a hood in front, and is spring suspended; a direct shaft drive has been substituted for the chain formerly used, and the power has been increased from 3½ to 5 horsepower. Spaulding Automobile & Motor Co., Buffalo, N. Y.—Spaulding gasolene cars.

Space 111—E. R. Thomas Motor Co., Buffalo, N. Y.—Buffalo gasolene cars in two sizes, with hooded front, tonneau body, etc.

Spaces 112 and 113, Thos. B. Jeffery & Co., Kenosha, Wis.—Rambler gasolene touring cars have been fitted with wooden wheels of the artillery pattern, an auxiliary brake on rear wheel drums, a float feed automatic carburetter, a longer wheel base and an extra detachable seat carried on the bonnet. The ignition is controlled by an automatic governor. A single cylinder, horizontal engine developing 5½ horse-power is used.

Space 114, The George N. Pierce Co., Buffalo, N. Y.—The Arrow and the Moterette, the former an entirely new car. A two cylinder vertical motor, positioned in front under a bonnet, furnishes the power. Simplicity of control is one of its characteristics, the accelerating devices being under the hand and the retarding ones under the foot.

Space 115, The Stearns Steam Carriage Co., Syracuse, N. Y.—Stearns steam and gasolene cars.

Space 116, Ward-Leonard Electric Co., Bronxville, N. Y.—Knickerbocker gasolene cars.

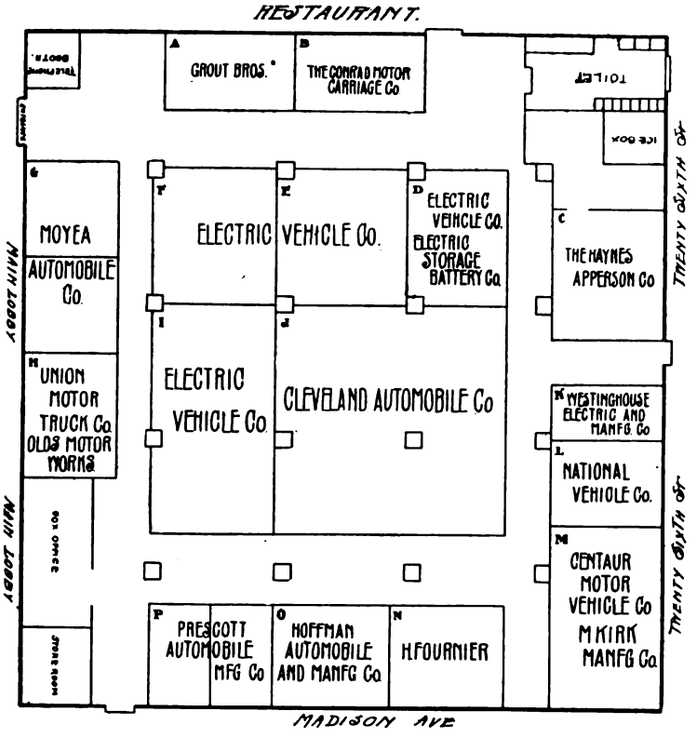
Spaces 117 to 120, Winton Motor Carriage Co., Cleveland, Ohio—Winton gasolene touring car, increased from 15 to 20 horsepower. The two cylinder horizontal motor, centrally positioned, is retained, and many improvements in detail have been made. The tonneau body is roomier and more comfortable.

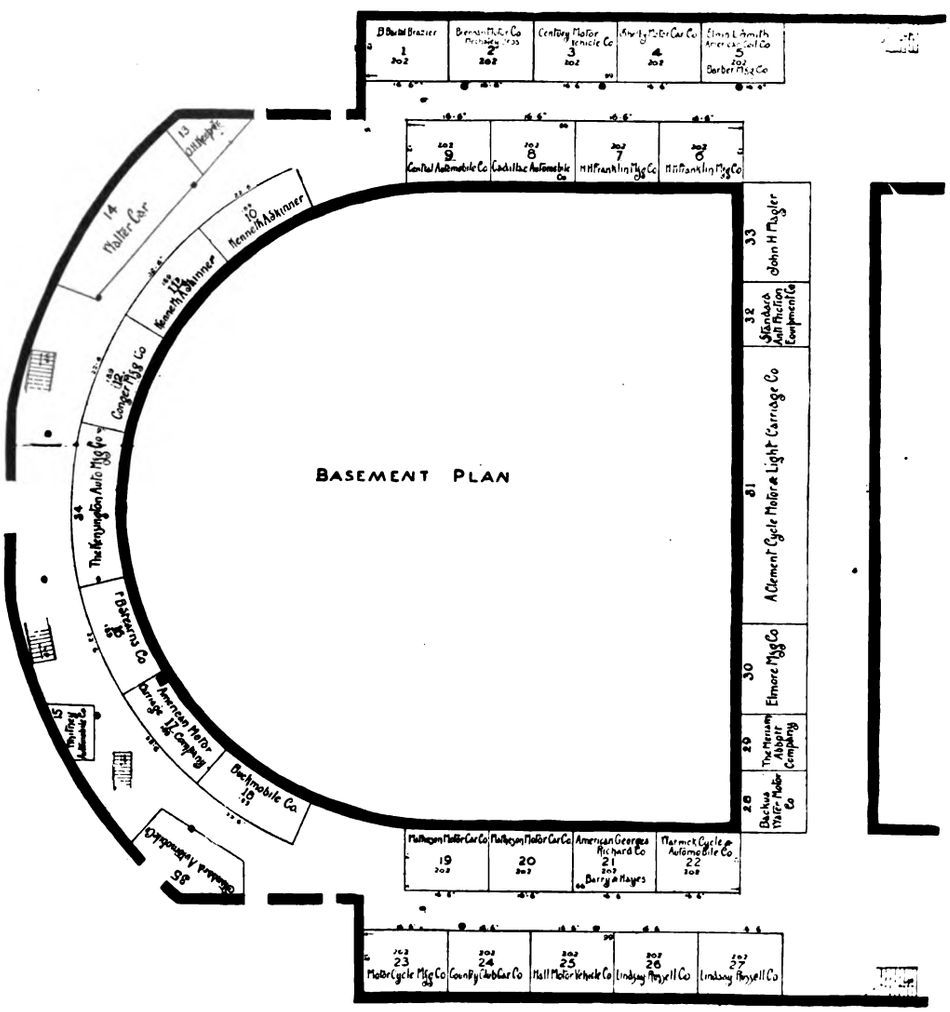
Space 121, Sidney B. Bowman Automobile Co., New York—Panhard gasolene cars.

Space 122, Pope-Robinson Co., Hyde Park, Mass.—Robinson gasolene touring car, with a friction clutch for each speed, water cooled cylinder head and gravity gasolene feed.

Space 123, Searchmont Automobile Co., Philadelphia—Searchmont gasolene cars, with a two cylinder, vertical motor, with admission valves placed directly over the exhaust valves. The control is by means of a ball governor acting on the throttle at the carburetter, and so designed that it does not change the mixture.

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Spaces 124 and L, National Motor Vehicle Co., Indianapolis, Ind.—National electric vehicles, many of them entirely new, and a new gasolene car.

Space 125, J. Stevens Arms & Tool Co., Chicopee Falls, Mass.—Stevens-Duryea gasolene cars of the two cylinder, horizontal opposed type of engine, with lengthened wheel base, larger axles and wider seats.

Space 126, Duryea Power Co., Reading, Pa.—Duryea gasolene cars, having a more elastic front running gear, better ignition, fittings, etc.

Space 127, Apperson Bros., Kokomo, Ind.—Apperson gasolene touring cars.

Space 128, Goodyear Tire & Rubber Co., Akron, Ohio—Single tube, detachable and solid automobile tires.

Space 129, Gleason-Peters Air Pump Co., New York—Tire pumps, gauges, cocks, whistles, etc.

Space 130, International Fire Engine Co., Elmira, N. Y.—Steam fire engines.

BALCONY.

Spaces 1 and 2, the Hartford Rubber Works Co., Hartford, Conn.—Hartford single tube, Dunlop detachable and Turner solid tires, together with rubber specialties, such as mats, etc.

Space 3, the Badger Brass Mfg. Co., Kenosha, Wis.—Solar acetylene automobile lamps in a wide variety of styles and prices.

Space 4, the New Process Rawhide Co., Syracuse, N. Y.—Noiseless rawhide pinions, etc.

Space 5, Fisk Rubber Co., Chicopee Falls, Mass.—Fisk single tube and Fisk detachable tires, vulcanizers, etc.

Space 5, Firestone Rubber & Tire Co., Akron, Ohio—Solid tires for carriages.

Space 6, Gray & Davis, Amesbury, Mass.—Automobile lamps.

Space 7, Metallic Rubber Tire Co., New York—Pneumatic tires with a metallic tread.

Space 8—Baldwin Chain & Mfg. Co., Worcester, Mass.—Baldwin patent chains for power transmission, both roller and plain. Also American Roller Bearing Co., Boston, Mass.; roller bearing axles, etc.

Space 9, E. J. Willis, New York—Automobile parts, fittings and sundries, including the Herz spark plugs.

Space 10, Joseph Dixon Crucible Co., Jersey City, N. J.—Graphite lubricants, graphite pipe joint compound, brazing crucibles, etc.

Spaces 11 and 12, B. F. Goodrich Co., Akron, Ohio—Goodrich single tube and detachable pneumatic tires for automobiles, light carriages, etc.

Spaces 13 and 14, The Veeder Mfg. Co., Hartford, Conn.—Full line of Veeder odometers, with attachments for all styles of cars.

Spaces 15 and 16, the Post & Lester Co., Hartford, Conn.—Automobile supplies and accessories of all kinds.

Spaces 17 and 18, Rose Mfg. Co.—Lamps.

Spaces 19 to 22. Homan & Schultz, No. 1,784 Broadway, New York—Northern Gasolene cars, for which they are the metropolitan agents. The car is a handsome one of the runabout type, seating two persons and propelled by a single cylinder horizontal engine centrally positioned.

Space 23, Consolidated Rubber Tire Co., New York—Solid tires.

Space 24, G. & J. Tire Co., Indianapolis, Ind.—The G. & J. detachable tire in a wide range of sizes.

Space 25, Twentieth Century Mfg. Co., New York—Twentieth Century oil and acetylene automobile and carriage lamps.

Space 26, the Ajax Motor Vehicle Co., New York—Ajax light electric runabout, having a single lever control and marked by the simplicity of its running gear.

Spaces 27 to 29, the General Automobile & Mfg. Co., Cleveland, Ohio—"General" gasolene runabout, a two cylinder balanced engine car, marked by simplicity and strength. All gears run in oil, and a mechanical force feed lubricator effectually cares for this important matter.

Spaces 30 to 32, Lane Motor Vehicle Co., Poughkeepsie, N. Y.—Three steam cars, one of

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them being a new four passenger car. The Lane cars have been improved in detail, rather than by the introduction of new principles.

Spaces 33 and 34, Automobile Supply Co., New York—Supplies and fittings.

Space 35, R. E. Dietz Co., New York—Automobile lamps.

Space 36, A. H. Funke, New York—Kelecom motors and parts, lamps, bells, horns, etc.

Space 37, C. F. Splitdorf, New York—Splitdorf spark coil, spark plugs, etc.

Space 38, National Carbon Co., Cleveland, Ohio—Batteries.

Space 39, Atwood Mfg. Co., Amesbury, Mass.—Lamps.

Spaces 40 and 41, Buffalo Gasolene Motor Co., Buffalo, N. Y.—Buffalo gasolene motors.

Space 42, Standard Welding Co., Cleveland, Ohio—Electrically welded steel tubing for radiators, steel rims, etc.

Space 43, American Ball Bearing Co., Cleveland, Ohio—Ball bearing axles, wheels, etc.

Space 44, The Whitney Mfg. Co., Hartford, Conn.—Whitney standard roller chain for automobiles.

Space 45—The Dow Portable Electric Co., Boston, Mass.—Dow compound battery, induction coils, etc.

Spaces 46 to 51, Charles E. Miller, New York—Full line of automobile supplies, parts, fittings, accessories, etc., of domestic and foreign manufacture.

Space 52, Thos. J. Wetzel, New York—Parts, fittings and supplies, for which he is manufacturers' agent.

Space 53, The Midgeley Mfg. Co., Columbus, Ohio—Midgeley tubular steel automobile wheel. Timkin Roller Bearing Co., Canton Ohio—Roller bearing axles, etc. Brown-Lipe Gear Co., Syracuse, N. Y.—Equalizing gears, etc.

Space 54, International Automobile Vehicle Tire Co., Milltown, N. J.—"Fox" and other brands of automobile and vehicle tires.

Space 55—Champion Mfg Co., Brooklyn, N. Y.—Champion transmission gears.

Space 56—Weston-Mott Co., Utica, N. Y.—Wire and wood automobile wheels.

Spaces 57 and 58—The Diamond Rubber Co., Akron, Ohio—Diamond single tube and Diamond detachable tires for automobiles.

RESTAURANT.

Space A, Grout Bros., Orange, Mass.—Grout steam tonneau, described elsewhere, and one of the features of the show.

Space B, the Conrad Motor Carriage Co., Buffalo, N. Y.—Conrad gasolene touring car and runabout, with two cylinder vertical engine in front under a bonnet.

Space C, Haynes-Apperson Co., Kokomo, Ind.—Haynes-Appereson gasolene cars, with new suspension frame, newly designed body, new clutch construction, new starting device, etc. The two cylinder, horizontal balanced motor is retained.

Spaces D, E, F and I, The Electric Vehicle Co., Hartford, Conn.—Columbia electric and gasolene vehicles, thirteen in all. In the latter, which is exhibited for the first time, the noiseless hunning, speed control and accessibility features are especially dwelt upon. The car is of the four cylinder vertical type, designed on the most modern lines. The electric vehicles comprise broughams, hansome, coupes, runabouts, cabriolets, victorias, tonneaus and a special service wagon and truck, the latter being the latest type of commercial vehicles. The Electric Storage Battery Co., Philadelphia, will occupy part of this space and show Exide batteries, etc.

Space G, Moyea Automobile Co., Marion, N. J.—An entirely new Moyea gasolene car, designed along the lines of the Rochet-Schneider, with a four cylinder vertical engine, Mercedes type radiating system, etc.

Space H, Union Motor Truck Co., Philadelphia—Motor trucks.

Space J, The Cleveland Automobile Co., Cleveland, Ohio—Cleveland gasolene cars, a handsome, moderate priced car of the runabout type.

Space K, Westinghouse Electric & Mfg. Co., No. 8 Bridge street, New York City—Electric motors and charging apparatus.

Space M, Centaur Motor Vehicle Co., Buffalo, N. Y.—Centaur electric runabouts. Kirk Mfg. Co., Toledo, Ohio—Kirk gasolene cars, which will be exhibited for the first time. They are of up-to-date design, motor in front, tonneau body, etc.

Space N, Paris Automobile, Paris, France—Panhard and other French gasolene cars.

Space O, Hoffman Autmobile & Mfg. Co., Cleveland, Ohio—Hoffman single cylinder gasolene cars.

Space P, Prescott Automobile Mfg. Co., New York—Prescott steam cars, the principal model being a runabout that has made a splendid reputation during the last year.

BASEMENT.

Space 1, H. B. Brazier, Philadelphia—Brazier gasolene touring car, having a chainless drive with solid rear axle, direct drive on top speed, positive clutches, etc.

Space 2, Brennan Motor Co., Syracuse, N. Y.—Gasolene motors.

Space 2, Mechaley Bros., Stamford, Conn.—Buffalo automobiles and kerosene burners.

Space 5, Elwin L. Smith, Boston, Mass.—I. M. C. steering checks.

Space 3, Century Motor Vehicle Co., Syracuse, N. Y.—Century gasolene and steam cars. The latter is new, propelled by a single cylinder horizontal motor, placed centrally, with planetary type transmission. The steam car remains unchanged, experience having demonstrated change to be unnecessary.

Space 4, Shelby Motor Car Co., Shelby, Ohio—Shelby gasolene cars, with a double cylinder motor, having two pistons in each cylinder, the charge being exploded in the centre of cylinder. It is claimed that 40 per cent more power is gained by this method of construction.

Space 5, American Coil Co., West Somerville, Mass.—Spark coils, dynamos and ammeters. Barber Manufacturing Co., Boston, Mass.—Kerosene burners.

Spaces 6 and 7, H. H. Franklin Manufacturing Co., Syracuse, N. Y.—The Franklin four cylinder vertical engine, air coiled, gasolene car. Although in use for some time the Franklin car has not been on exhibition before.

Space 8, Cadillac Automobile Co., Detroit, Mich.—Cadillac gasolene cars, a new vehicle of the medium weight type, designed to carry two or four passengers. The engine is a single cylinder, horizontal one, and planetary transmission is used.

Space 9, the Central Automobile Co., New York.—Imported gasolene cars, Peugeot, Mors, Renault, etc.

Spaces 10 and 11, Kenneth A. Skinner, Boston.—French De Dion gasolene cars, with high speed vertical motors, De Dion shaft and gear transmission, etc.

Space 12, Conger Manufacturing Co., Groton, N. Y.—Stolz gasolene motors.

Space 13, O. H. Keep, Jr., 1147 Broadway, New York.

Space 14, Walters Car Co., New York.—Waltmobile gasolene cars.

Space 15, Whitney Automobile Co., Whitney's Point, N. Y.—Whitney gasolene cars.

Space 16, F. B. Stearns & Co., Cleveland, O.—Stearns gasolene cars, including a new and imposing looking car, closely resembling the latest foreign models, but retaining the Stearns double cylinder, horizontal engine, centrally positioned. A new valve action to insure quiet running, new small tube radiation, "Bois d'Arme" frame and controls all on steering wheel, are the special features.

Space 17, American Motor Carriage Co., Cleveland, O.—The American gasolene car, a pleasing runabout type of vehicle, driven by a single cylinder horizontal motor.

Space 18, Buckmobile Co., Utica, N. Y.—The Buckmobile gasolene car.

Spaces 19 and 20, Matheson Motor Car Co., Grand Rapids, Mich.—An entirely new and as yet unseen gasolene car, concerning which considerable curiosity is felt.

Space 21, American Georges-Richard Co. (Barry & Hayes), New York.—Georges-Richard gasolene cars.

Space 22, Warwick Cycle and Automobile Co., Springfield, Mass.—Warwick gasolene runabout.

Space 23, Motor Cycle Manufacturing Co., Brockton, Mass.—Marsh motor bicycles.

Space 24, Country Club Car Co., Boston, Mass.—Country Club cars.

Space 25, Hall Motor Vehicle Co., Dover, N. J.—Hall gasolene car, having a two cylinder, horizontal self-contained motor, with gearing necessary to make speed changes directly connected to rear axle.

Spaces 26 and 27, Lindsay-Russell Co., Indianapolis, Ind.—Parts and fittings.

Space 28, Backus Water Motor Co., Newark, N. J.—Backus water motor.

Space 29, The Meriam-Abbott Company, Cleveland, O.—Electric charging apparatus.

Space 30, Elmore Manufacturing Co., Clyde, O.—Elmore gasolene cars, with the well tested Elmore two cycle double cylinder, horizontal, opposed motor.

Space 31, A. Clement Cycle Motor and Light Carriage Co., Hartford, Conn.—Motors and attachments for bicycles.

Space 32, Standard Anti-Friction Equipment Co., New York City.—Anti-friction specialties.

Space 33, John H. Flagler, New York City.

Space 34, The Kensington Automobile Manufacturing Co., Buffalo, N. Y.—Kensington gasolene cars, with two cylinder motor on front axle, flexible shaft transmission, etc.

Space 35, Standard Automobile Co., New York.—Decauville gasolene cars.

FIRST TIER BOXES.

Space 39, the Motor & Gear Mfg. Co., New York—Gasolene motors, transmission gears and other parts.

Spaces 41 and 43, Hyatt Roller Bearing Co., Harrison, N. J.—Roller bearing axles, etc.

Space 45, Whitlock Coil Pipe Co., Hartford, Conn.—Coil pipe for radiating purposes.

Spaces 47, 49 and 51, Shelby Steel Tube Co., Pittsburg, Pa.—Shelby steel tubing for running gears, etc.

Space 40, Mfg. & Selling Co. of America., New York—Automobile supplies.

Space 42, Electric Contract Co., New York—Electrical specialties.

Spaces 44 and 46, Desberon Motor Car Co., New York—Desberon gasolene cars.

Space 48, Goodson Electrical Ignition Co., New York—Electrical specialties.

Space 50, Edison Storage Battery Co., Orange, N. J.—Edison storage battery for electric automobiles.

Space 52, Coler Woop, New York—Automobile specialties.

Hyatt will Entertain.

The Hyatt Roller Bearing Co. of Harrison, N. J., will give a box party at Weber & Fields' on Wednesday evening of Show week, same to be preceded by a dinner at Mouquin's, the latter given by a well-known manufacturing concern.

Mr. Peter S. Steenstrup, of the Hyatt Co., has the arrangements in charge.

To Protect the Tires.

One of the novelties in the tire section at the show will be the Cinch Tire Protector, which will be exhibited for the first time in the East. The device, which is made by the Cummings Tire Mfg. Co., New York, will be fitted to the Locomobile gasolene car.

Solar automobile lamps have "caught on" in splendid shape, orders for no less than 560 of the big headlights having already been booked by the Badger Brass Mfg. Co.

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Commentary

I don't expect you to believe it, because really I, who tell you of it, do not believe it myself, but still the man who told me of the wonder has I am certain a credit balance on the truth side of the ledger kept by the recording angel To cease beating around the bush and come right out with it—there is a paper published within five hundred miles of New York which has not as yet announced its intention of publishing an "automobile number" neither this week nor next! My informant failed to tell me where this peculiar paper was published or what ailed its editor when he thus omitted to join the mighty throng of "automobile number"-ers, consequently I am unable to verify this, to me, highly improbable story of their being any such a man or paper. I have seen announcements that the official organs or society, horsedom, undertaking, prizefighting, plumbing and every other walk, ride and glide of life and death were to issue special "automobile numbers," and I cannot therefore believe that there can be any editor so dead to "graft" as not to have taken advantage of this opportunity for a little soft money.

* * *

Although the fates may seem unkind
And we weary of the strife,
We never kick at the "dust" we find
In the broad highway of life.

* * *

The cashier of one of the biggest banks in New York met me recently and began to question me as to practicability, safety, etc., of the automobile. I soon saw from the intelligent questions he put to me that he had given the subject considerable thought and was all ready, in theory, at least, a convert to automobiling. I asked him why he didn't go to the show, look over the vehicles there and then buy the one which suited him best. "Because I am afraid somebody on the street will hurt himself with it," was the somewhat puzzling reply he made. Asked to explain he did so in this way: "There is a presumption that any man who works for or in a bank has at his command all of the funds of that institution; there is a certainty among entirely too many people that when, in addition to being a bank employe, a man owns an automobile, he is wealthy enough to pay all sorts of damages for all sorts of things. Now, I'm no trolley company. I know people in the Long Island town where I live who would put themselves in the way of being run over by me if I had an automobile; and, what's more, every jury, petty judge and rural policeman there and elsewhere is solidly arrayed against the motor vehicle and all connected with it. When things change, as, of course, they must and will, I am going to get an automobile, sure; but as things now are I cannot afford it, thank you!" The worst part of the whole affair is that this man is only one of a great many who, like himself, would be glad to purchase automobiles had the legal status of the vehicle been more firmly established from the beginning. As it is, too many cooks, French ones at that, have only succeeded in spoiling the broth of the motor vehicle's road rights, until even the cooks themselves can't stomach it.

* * *

All free advice may seem quite nice,
But if you'll think it o'er,
You'll find it's worth about the price
You paid for it; no more.

* * *

Taking a really impartial view of my own mental equipment, I believe I am fairly entitled to classify myself as an optimist. I like to look at the right side of things and I have unbounded faith in the ability of man to accomplish almost anything. So, when, even under these conditions, I find myself unable to enthuse over a scheme or an idea I have grown used to thinking that the possibilities of their immediate accomplishment is a thing which is not quite so likely as the failure thereof. Twenty years ago no man was surer than I that I would within a few years of then be able to mount a bicycle at my door in New York and ride comfortably over a hard transcontinental highway to San Francisco. To-day, with the memory of how two decades have passed away and nothing been done to actually build a single mile of this grand highway, try as I may I find I cannot bring myself to the belief that the whole idea is any less a dream in 1903 than it was in 1883. I am aware that the American Automobile Association is fostering the scheme, but even so, I still see no chance of this thing coming to pass in your day or mine. Enthusiasm and theory, when united, will often accomplish wonders, but I believe a 5,000-mile boulevard is a bit beyond the capability of any combination, no matter what.

* * *

When she found that this adroit chauffeur
Had a good right arm to spare, for her,
This maid was very much amazed
(And possibly a trifle phased),
Protesting, timidly: "Oh, sir!"

* * *

All motors, just like all men, have their faults. No matter what make a man selects as the best for his use, there are sure to come times, plenty of them, too, when he thinks any motor of any make or any model would be preferable to the one he possesses. Too much is expected of the power supplyer of an automobile. People there are a-plenty who really believe a motor vehicle is the twentieth century edition of the wonderful one-horse shay. They think a motor should always be at its best even though its neglect should be of the worst. The best engines on a railroad are thoroughly overhauled by trained experts each day, even though they are never for a moment out of the hands of any but experts. The machinery of an automobile, a dozen times more delicate than that of a locomotive, is examined, if at all, by a man who would not be allowed to polish the brass work on a locomotive, and this "expert" turns the vehicle over as perfect to a driver who too frequently knows ten times less than he does about the whole affair. The wonder is that the vehicles run at all. Everything considered, nothing could better demonstrate than this does what a world of ignorant mistreatment and neglect the automobile can stand and does, and then despite of it all go swiftly and safely on its way in a manner little short of miraculous.

* * *

The patient sighed a trembling sigh,
And brushed away a tear,
Then cried in low and anxious tones,
"Oh! tell me, doctor dear;
When horses come to be replaced
By motor cars and such,
Do you suppose Hay-Fever'll be
Diminished very much?"

* * *

Two wealthy gentleman, horse owners and reputable citizens of Somerville, N. J., on New Year's evening, while discussing the affairs of state and more than likely the deadly automobile, got into a barroom argument as to the merits of their respective trotters. The result was a let of $1,000 a side and the teams for a race to Bernardsville. The horses were thereupon driven thirteen miles over a pitch dark road in less than fifty-eight minutes. Not considering the brutality of such a contest, and looking at it only from the standpoint of public safety, what do you think of such an affair? What do you suppose would have been the action of the rural authorities, these same gentlemen and the local metropolitan press if the racers had been automobiles in place of horses which were driven at their top speed over that unlighted road?

* * *

Of course, many people when they come to chose an automobile have many ideas as to which is the best type or make thereof; but it does really seem too bad that the other fellows should so often be so radically wrong in their selections, don't it?

* * *

Imagine a street sweeper the morning after the night before. His head is racked with pain, his throat is one long Sahara of crying thirst and his pockets are as empty as the can from which his katzenjammer came. Imagine such a man in such a profession and condition gazing at a lot of passing automobiles. Can you not hear him say, in a voice none too clear or loving:

"This automobile innovation,
This inflated, horseless creation
Is the curse of an honest nation,
Bringing a speedy termination
To my most worthy avocation."

The words he used might not be exactly these; they might be a bit fewer and much stronger. But still they would convey something of the same idea as above; don't you think they would?

THE COMMENTATOR.

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HONEYCOMB RADIATORS

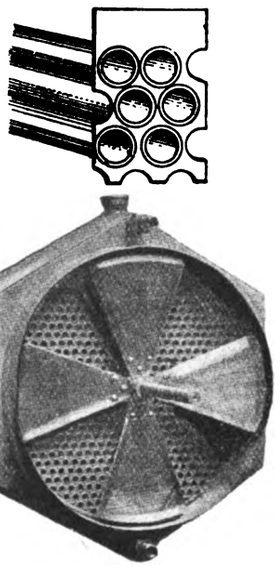
Construction of the Famous Mercedes Cooler and its Many Imitations Described.

Since the Mercedes car set the fashion in bonnet shapes and radiator systems, by bringing out their "beehive" or "honeycomb" pattern, makers, and especially the French ones, have made haste to follow the lead of the clever German concern. Originally made in one set form, the copyists have varied this greatly, both as regards the shape of the bonnet and of the radiating tubes. In all of them, however, the principle is the same, that is, the tubes which pierce the tank are surrounded by the hot water as it comes from the engine, and this runs around these tubes, and is cooled by the circulation of air through them. Equally of course, the principle of all radiators, coolers, or condensers is identical. The heated steam or water which it is desired to condense or cool, as the case may be, is passed either through or around tubes exposed to the cooling influences of the atmosphere.

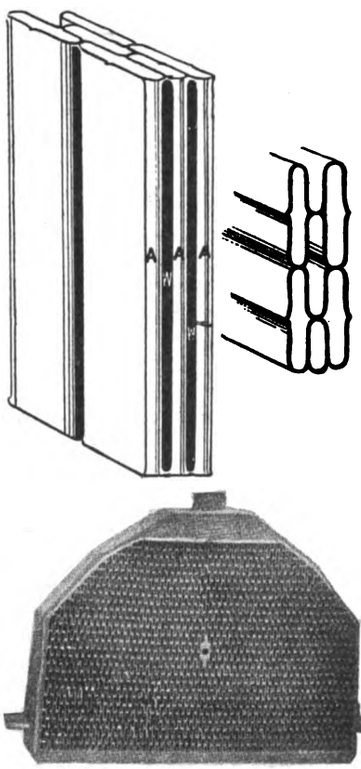
The two illustrations will make the construction of such coolers clear. The fan shown behind one of them is driven by the engine, and its mission is to induce a current of air through the air tubes of the radiator, so as to insure cooling. It is not always necessary at high speeds or driving against strong winds, but when the car is hill-climbing or running very slowly artificial circulation is imperative. These coolers take the form of a flat box some three or more inches thick, which is pierced by a number of tubes. The genuine Mercedes has square tubes packed very closely together, but there are numerous other sections (round, square, diamond and lozenge), and the principle in all is unchanged.

In the case of the flanged coils of radiators which have hitherto been mainly used, the water is pumped through the cooling pipes; but with the honeycomb type the air passes through the pipes, and the water surrounds them.

As the lozenge type of air tubes was one of the puzzles of the French show—people being unable to understand how the circulation was obtained, an explanation of the apparent mystery is timely. The tubes are oblong in section. Both ends are slightly expanded, and at the centre on either side a slight lip is formed. The tubes are then nested together, as shown, and are soldered together at the ends. Now the expanded lips of the tubes coming close together leave a space around each separate tube, as is depicted by the heavy shading. The air spaces —the interior of the tubes—are lettered A, while the water spaces are lettered W. The object of the central lip in the side of each tube is to form an abutment for the tube lying next to it and its opposite one; in this manner a very neat joint is secured, and the lip on each tube being very slight it is very difficult to detect any deformation. In



the illustration the water spaces are slightly exaggerated in order to show them more clearly; in reality they would be little more than half the size shown. Though this is a very small space indeed, it is claimed to be sufficient for the purpose, and it certainly



results in a very large area of thin films of water being exposed to the cooling surfaces of the tubes. The tubes are all soldered in position, and so far as appearance is concerned the lozenge form of radiator is very neat, though it is questionable whether it would prove so durable as the types with the round or square tubes, in which greater clearances are given.

Haynes-Apperson History.

The history of Haynes-Apperson cars and the improvements made in them for 1903 are set forth in a little catalogue of pocket size which has just been issued by the Kokomo firm. The fact that the manufacture of the first Haynes-Apperson was begun at Kokomo in 1893 is not generally appreciated. The trip from Kokomo to New York was made in 1899 by a Haynes-Apperson. The cuts show a runabout, a "standard model," and a surrey. The improvements enumerated make a list of just a dozen, the new starting device that renders easy for a woman of ordinary strength to start the car being one of the most interesting.

Some Ignition Statistics.

Statistics pertaining to the ignition devices used on cars at the recent Paris show reveal the fact that the tube type has passed away entirely, not one concern adhering to it.

Of some fifty-two exhibitors no less than forty have adopted accumulators—that is, batteries. Five use both accumulators and magnetos and seven magnetos alone. The latter are as follows: Georges Richard, Mors, Rochet-Schneider, Benz, Fiat, Mercedes and Dewald. The devotees of the magneto alone are Cottereau, Dietrich, Peugot, Louet and Aerocanthe.

Catalog of the Century.

To "meet the popular demand for a medium weight touring car, carrying either two or four passengers, with ample power to drive it over average American roads safely at a reasonable rate of speed," was the avowed object of the Century Motor Vehicle Co. in producing the Century Tourist gasolene car. How the object has been attained is set forth in detail in a well printed booklet just issued by the Century Co. The car itself is propelled by a 7 horse power single cylinder (horizontal) engine, and is long of wheel base, massive in construction and roomy and comfortable.

Autocar's Calendar.

One of the most effective and artistic calendare of the season is that just gotten out by the Autocar Co., Ardmore, Pa. A roadside and brookside scene, with an Autocar tonneau in the foreground, is flanked by the cups won by the Autocar in recent events, and by bunches of cattails in cream and gold, the whole set in a background of chocolate color that finishes it off most effectively.

A French firm, Sautel & Sechaud, make a cheap gasolene voiturette, the price of which begins at $400. These cars are gear driven. The gears are always in mesh, and the drive is direct for each speed. One change speed handle is fitted, and the driving is said to be simplicity itself.

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BOSTON DEALERS ORGANIZE

Skinner Chosen President and Sanction for Show Will now be Sought.

Boston's talk of a combination of trade interests has crystalized, the result being a permanent organization, which was effected last week, under the name of the Boston Automobile Dealers' Association. The following officers were elected: President, Kenneth A. Skinner; vice-president, W. E. Eldridge; secretary, C. I. Campbell, and treasurer(A. P. Underhill.

The temporary committee on show, consisting of Messrs. W. E. Eldridge, F. E. Randall and G. G. Reed, was made a permanent committee, and Messrs. G. H. Lowe, Harry Fosdick and J. A. McAlman were appointed to confer with the National Automobile Manufacturers' Association, with the idea of securing a sanction for the exhibition.

Mr. Fosdick, as chairman of the temporary legislative committee, reported that he had learned through President Soutter of the Massachusetts Automobile Club that that organization would co-operate with the association in its effort to prevent the enforcement of adverse legislation. Mr. Fosdick further said that it would be necessary to carry on a campaign of education and that the members of the association must stand ready to assist the automobile club and its own committee by being prepared, at twenty-four hours' notice, to provide for a series of speed and brake tests for the purpose of demonstrating to the legislators the entire practicability of the automobile.

There is a strong probability that the association will decide to hold a local show in March next, probably during the third week.

Recent Incorporations.

Dover, Del.—The National Motor Car Co., with $256,000 capital; to manufacture motor cars and automobiles.

New York, N. Y.—Neftel Automobile Co., with $75,000 capital. Direcetors—William Hoey, Frank Sweeney and Knight Kneftel.

New York, N. Y.—The Electric Transit Co., with $5,000 capital; to operate vehicles propelled by electricity or other power. The directors are John Mills, Thomas Steeley and Franak E. Taylor.

New York, N. Y.—Motor & Gear Mfg. Co., with $25.000 capital; to manufacture automobiles and motor vehicles. Directods—John Lever, jr., Inwood; Thomas Myers and Alexander Howell, New York.

Minneapolis, Minn.—Pence Automobile Co., with $25,000 capital; to manufacture, repair and deal in automobiles. The corporators are Harry E. Pence, D. Pence and John W. See.

New York, N. Y.—Central Automobile Co., with $150,000 capital. Directors: Frank Betterton, Brooklyn; H. T. Randall, East Orange, N. J.; C. J. Gleason, New York.

Cup Course Still in Doubt.

According to the latest advices, Great Britain seems to be as far away as ever from being able to have the Bennett Cup race held on its territory. A previously selected course having been rejected on account of its being only fifty miles in circuit, the Automobile Club of Great Britain and Ireland selected another course, 131 miles long, which it hoped would comply with the rules and meet the acceptance of the Automobile Club of France. On this new course the starting point is twenty miles from Dublin, in the town of Maas. The main distance is in the counties of Kildare and Queens, there being a short stretch in County Carlow. The road surface is reported to be poor, but no worse than that section of last year's course between Bregenz and Innsbruck.

While the club was congratulating itself on having found a course, Motoring Illustrated wrote to King Edward, asking him to aid the project and, according to the Daily Mail, His Majesty has expressed disapproval of the race being contested in Great Britain, because it would necessitate a suspension of the speed law of twelve miles an hour.

The Men and Their Toasts.

The speakers and toasts at the annual banquet of the National Association of Automobile Manufacturers, which will be held at the Waldorf-Astoria on Friday, January 23, will be:

"City of New York," Jacob A. Cantor; "Horses, Carriages and Motor Cars," F. S. Fish; "National Aid to Road Improvement," George A. Pearre; "What Lawyers Hope for from Automobiles," John S. Wise; "Improvement of Our Highways and Construction of Automobiles," Albert L. Shattuck; "Electrical Matters Pertaining to Automobiles," T. C. Martin; "Various Phases of the Automobile Industry," O. C. Barber; "Automobile Literature," S. A. Miles; "How to Sell Automobiles," F. L. Smith, and "Western Highways," H. H. Gross. The toastmaster will be Winthrop E. Scarritt.

What the Moyea is Like.

Although built in a remarkably short time, the new Moyea gasolene car, which a Motor World man had a look at on Wednesday, is one that reflects much credit on its builders, the Moyea Automobile Company, newly formed. It is designed closely on the lines of the Rochet-Schneider, and has a 4-cylinder, vertical engine, mounted under a square hood, which also contains a Mercedes honeycomb radiating system. The car has already been given some lengthy test runs, and develops a speed and power that is very gratifying to its makers. The car will be exhibited at the show.

The Kaiser's Speedway.

In the plans drawn by Emperor William for transforming the Grunewald Forest into a great public park for Berlin an automobile speedway seven and a half miles long and twenty-one yards wide is said to be a feature.

EXPERIMENTS WITH GRAPHITE

Some Interesting Results Obtained in Lubricating Tests—Emulsions not Advantageous.

Pure graphite as a lubricant for steam motors has been made the subject of interesting experiments abroad. A 25 horsepower steam engine was used, and in the first tests the cylinder walls were lubricated by taking off the cover and strewing dry graphite powder on the walls; the slide valve was lubricated by blowing the powder through a screwhole in the valve box and turning the engine by hand to expose all the parts in turn. This method was not very practical, and next was tried an emulsion of graphite and water, introduced into the current of steam entering the valve box, a lubricating pump, with mechanical mixing and stirring, being employed. In spite of the energetic stirring the graphite showed a great tendency to settle and choke the passages. The experimenter concluded that in general steam engine cylinders are lubricated excessively, and that with good construction and fitting, and when the steam is saturated, lubrication is not strictly necessary at all, while for security quite a small quantity of graphite is sufficient. The use of a graphite oil emulsion offers few advantages, lubrication with pure graphite being the method to be aimed at, as, besides being cheap, it gives an oil-free condenser water and greater cleanliness. The best method of applying pure graphite to surfaces to be lubricated remains to be discovered. Experiments were made with emulsions of oil and graphite, and they were found to be expensive and liable to interrupt the working of the lubricating arrangements owing to the graphite settling in the passages.

The Life of a Dry Battery.

"The life of a dry battery?" said F. E. Moskovics, who until recently was connected with the Liberty Electric Supply Co., when the subject was under discussion. "I'd like to wage that it is possible to get 14,000 miles out of a good set. Yes, I mean 14,000 miles, but I do not mean that they will do that anywhere or with any motor. But I do believe that if a man sought to make a battery record and selected a slow speed engine and a level country like Chicago he would not have a great deal of trouble in covering the distance stated. It's the hills and the high speeds and high geared engines that eat up battery power."

"Chassis," Its Pronunciation and Origin.

Chassis—pronounced chas-sy—is the underframe of a car, and includes, in addition to the running gear, the motor, transmission gear, etc. The word was originally used in connection with ordnance, and has progressed from cannons to cars by a sort of natural transition.

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About the Bakers.

Quietly as their dainty productions run, the Baker Motor Vehicle Co., of Cleveland, Ohio, has so strongly and surely intrenched itself in popular favor that to-day "Baker" comes naturally to mind whenever electric carriages are mentioned. The natty light runabouts, and the graceful, superbly designed stanhopes seem to attract equal attention, hundreds of the former being used in all parts of the country by business men to run about town, while the latter strongly appeals for physicians' and ladies' use.

As every one knows, the Baker resembles no other electric carriage, being from the ground up the creation of W. C. Baker, and built, first, to demonstrate the correctness of his theories, and, second, to refute the charge that it was impossible and impracticable to make a lightweight, electrically propelled runabout.

His theory was that great power, with the attendant great weight and bulk, was entirely unnecessary, and that moderate power applied to the driving wheels gave far better results. To attain this end the famous Baker ball bearing anti-friction devices were invented, and their success may be fairly said to have marked a new epoch in the construction of electric vehicles. In the entire carriage there is not the slightest detail of construction or design that is not worked out theoretically perfect beforehand, and afterward subjected to the severest and hardest practical tests before it is incorporated into the final construction.

The almost marvellous record of the Baker cars is due largely to these facts, their performances being at total variance with what has hitherto been considered the inherent limit of lightweight electric battery capability.

A complete exhibit of the "Baker beauties," in charge of Sales Manager M. L. Goss, will be seen at Madison Square Garden, at space No. 98.

They List Nearly Everything.

One of the most complete and judiciously arranged catalogues of automobile parts for the trade that has yet appeared is the 1903 book of the Neustadt-Perry Co., No. 826 South Eighteenth street, St. Louis, Mo. It is a well bound book of forty-eight pages and tinted cover, of a folio size that affords ample room for comprehensive illustrations of the various lines of running gears, complete machines, gears, axles, brakes, wheels, chains, radiators, dynamos, spark coils, engines, boilers, generators, pumps, valves, fittings of all sorts, lamps, bells, horns and sundries, and especially the Kokomo and Fisk tires.

To mark the completion of their handsome salesrooms at No. 141 West Thirty-eighth street, this city, the Banker Bros. Co. have sent out invitations for a formal opening to take place this afternoon at 5:30 o'clock.

The Professor on the "Problem."

Professor Frederick R. Hutton, Ph. D., dean of the faculty of applied science of Columbia University, delivered an interesting illustrated lecture on "The Automobile Problem" at the Polytechnic College, Brooklyn, last Monday night.

Professor Hutton said that if his hearers had been bitten by the bacillus of automobiling, as he had, they would agree with him that there is nothing like it. He would discuss the automobile as a motor, not as a carriage," and continued: "Here there are two classes to be considered, the storage system and the generating system. An automobilist of sporting blood has little or no use for the storage system, because it is never so powerful as when you stop. Another difficulty is that though a town may be but forty miles off, and the machine have a capacity for seventy-five miles on a level, a hill or a sandy road will use up so much power that to get to your town you frequently have to have a horse and $2. The storage machine the lecturer thought suitable for the city, on asphalt roads, for professional men and for women.

"With the generating class of motors, it is more possible to go over the parts of country where one wishes to travel, though it takes a man who is something of a mechanic to run one. It is light, safe, with an intelligent motorman, and it is much more speedy." With the aid of lantern pictures the professor discussed the technical points of motors at length.

At Every Show the ELMORE Stand Always

Looks like a Bee-Hive

With appreciative agents and buyers buzzing around it.

Small wonder, when we offer a

$1,500 AUTO FOR $800

And this year add a

Tonneau Touring Car at $1,400

A FEW FACTS ABOUT THE FAMOUS ELMORE MOTOR:

Its two cylinders have fewer parts than a single cylinder of any other type.
Either cylinder will propel car should the other be cut out.
Has Dynamo and Storage Battery. Motor will start and carriage will run on either.
The battery can be charged from dynamo while running. Tested three years.

A WINNER WHENEVER SHOWN.

Two first-class certificates New York-Boston Endurance Run.

See us at the New York Show, Space 30 "Exhibition Hall."

ELMORE MANUFACTURING CO., CLYDE, OHIO.

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FAVORS FREE STORAGE

A. C. Bostwick Lets Fall the Suggestion—Some Trade Opinions of it.

"If it is done in London successfully, why cannot it be done here? I believe that if some clever, enterprising man would open a place here near the park, a big place, and store cars free, depending upon the money taken in on repairs, cleaning and oiling for a profit, he would make a go of it. He would get all the business he could handle, that is certain. And why should he not make it pay, the same as Friswell does in London? I believe he could."

The speaker giving utterance to these sentiments was Albert C. Bostwick—place, Automobile Club of America; time, Friday afternoon, January 9.

It is proper to explain that it was not Mr. Bostwick's intention to go on record publicy as a champion for such a garage system, and he probably had no desire to do so, but he was unintentionally overheard while giving emphatic utterance to the expressions quoted in the course of a chat with a couple of other members of the club, who plainly did not agree with him.

The suggestion naturally finds no supporters among those now conducting garages. The objections made to it by a few to whom it was mentioned were practical in nature and strenuous. In the first place, it was generally agreed there is very little, if any, profit in a garage business pure and simple, even at the storage rates that are now charged. The manager of one of the largest places in town said:

"Bless you, man! If any one undertook that business here he'd be swamped before he knew it. Repairs! Why he wouldn't get enough out of repairs to pay his help, let alone his rent. We have cars in here that do not have a bit of repair work on them month after month. Then we have also a lot of machines that stand for months without being used. A free storage place would be a picnic ground for the owners of such cars, and they would soon have it so well filled that there would be no room for live patrons of the sort that use their cars frequently and do have oiling, cleaning and repairing done occasionally. No, siree! None of that for me. I'll bet it is not practicable here. Some one else may try it if they want to, but I won't."

Said another man:

"Well, they do a great many things in England that cannot be done here. It does not speak well for English machines to know that a man can pay for rent and light, heat, store them free and yet come out ahead by reason of the repair work needed on them."

Still another comment made was:

"I would not want to put any car of mine into a garage run on such a basis. I would feel like a 'cheap skate' in the first place, and, second, I would be in constant fear of what might happen. It might be all right, you know, but I have heard of peculiar doings, and maybe I am cynical. I would expect to find repairs needed on my car almost all the time. I would be surprised if I went any time to take out the car and found it ready to go without any tinkering. It would be quite the regular thing, I fear, to have the car go wrong while standing idle. I have known of some queer doings, I repeat, and I should quite expect to have a yearly repair bill equal to the price of the machine if I stored it in a free garage."

Glidden Makes a Prediction.

As an authority on both automobiles and telephones Charles J. Glidden, of Lowell, Mass., ranks high. He predicts that the use of the automobile will exceed the most sanguine expectations of to-day, and that as a means of transportation of humanity and merchandise it will surpass in popularity that of the telephone as a method of communication.

Four thousand carriage manufacturing establishments in the United States are now required to supply the demand for horse drawn vehicles. More employes than are now engaged in the building of carriages and wagons will be required to keep pace with the demands for the horseless vehicle. The fact is rapidly being established that the cost of transportation through the agency of that automobile is much less than the horse drawn vehicle, and when not in use the cost of maintenance is practically nothing, therefore thousands unable to pay the cost of keeping a horse can own an automobile and take their entire family to ride.

Whipple's Big Order for Oldsmobiles.

An important deal was made last week when R. W. Whipple, Binghamton, N. Y., closed a contract to handle the Oldsmobile as a distributing agency for ten counties, including the towns of Elmira, Cortland, Norwich, Cooperstown, Oneonta, Delhi, Walton, Ithaca, Owego, etc. All agents within this territory will be supplied from Binghamton, where a stock will be kept constantly in reserve. The first carload will reach Binghamton on February 15, and thereafter a carload will reach that town every two weeks during the season.

Miller's Mammoth Horn.

What is claimed to be the largest automobile horn ever brought into this country—a very colossus of horns—is being imported by Charles E. Miller, No. 97 Reade-st., this city. It is known as No. 400, measures eight inches across the bell, and lists at $40. An oval shaped funnel, fitted with a removable strainer, is another novelty shown by the Miller establishment.

New One in Newark.

The recently incorporated Motor Car Co. of New Jersey, Newark, N. J., has secured quarters at No. 12 Belleville avenue, and will sell Northern and Autocar gasolene cars.

SUBSCRIBERS MUST PAY

New York Supreme Court Rules on a Case Involving a Motor Car Stock Company.

An important ruling has been handed down by Justice Kenefick, of the Supreme Court of this State, bearing upon the liability of signers of stock subscriptions.

It appears that James B. Brady and others in January, 1900, signed an agreement subscribing for the number of shares set opposite their names in a corporation to be organized for the purpose of dealing in automobiles. The subscribers agreed to pay for their stock whenever called upon to do so by the corporation's directors. The company was duly organized, all of the signers to the subscription agreement, with the exception of Mr. Brady, becoming corporators. He was not named in the certificate of incorporation as a subscriber, nor was he ever tendered his stock.

In an action by the company against Mr. Brady to recover on his stock subscription, after a non-compliance by him with a demand by the directors, Justice Kenefick, of the Supreme Court, has given judgment for the plaintiff. "The distinction," said the justice, "between an agreement to form a corporation and subscribe to its stock and an agreement to subscribe for shares when the corporation is organized, which excellent authority says is 'unsound in principle and disappears as mere dicta upon a thorough sifting of the cases,' has been clearly adjudicated in this State in the recent case of Yonkers Gazette Co. vs. Taylor, 30 App. Div., 334, and the agreement in the case at bar falls within the former class.

"Of such an agreement Justice Hatch says in the Taylor case: 'This is absolute and unconditional: it does not contemplate further action upon the part of those signing, and must be regarded as final, when, being unrevoked, it is acted upon by the corporation then in contemplation of formation.'"

The only essential feature which distinguished Mr. Brady's position from the Taylor case was the omission to name him as a subscriber in the certificate of incorporation. The question therefore arose whether such omission was conclusive evidence of an election by the corporation to reject Mr. Brady as a subscriber, or was simply a circumstance to be taken in connection with other evidence in determining whether his subscription was accepted. Justice Kenefick takes the latter view. He said:

"Under the very first call for the payment of subscriptions, made twelve days after the organization, the plaintiff makes a demand upon the defendant for the payment of his subscription. Any inference of rejection based on the omission of his name from the certificate is overborne by this recognition of his subscription."

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THE
PLEASURES OF AUTOMOBILING
WILL BE GREATLY ENHANCED BY THE USE OF

HARTFORD or DUNLOP
PNEUMATIC TIRES

The ORIGINAL and "MODEL" TYPES of SINGLE AND DOUBLE TUBE TIRE CONSTRUCTION

Appreciating the fact that requirements vary as to Single Tube and Detachable Tire Construction, we offer the most reliable of both types—*The Honest Standards.*

THEY WERE BEST YEARS AGO, AND YEARS OF INTELLIGENTLY PERSISTENT, CAREFULLY DIRECTED EFFORT HAS MADE THEM BETTER TO-DAY.

Where Quality is desired—where Comfort, Durability, and Protection against Annoyances is wanted—where All-'round Satisfaction is demanded—these tires should be adopted. Let us prove this to you by sending you signed statements from some of the most prominent makers and users in this country.

The Hartford Rubber Works Company, Hartford, Conn.

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FOR PHYSICIANS' USE

One who has Used both Horse and Bicycle Proves Superiority of Motor Cars.

Evidence of a cumulative character continues to be offered re the remarkable superiority of the automobile over the horse. Whether cost or convenience be set up as the standard, the decision remains unchanged. One well qualified to speak with authority on the subject is Dr. H. Cooper, of Amesbury, Mass., who in the last fifteen years has had exceptional opportunities for comparing the horse drawn buggy, the bicycle and the motor vehicle, having used them all professionally.

"This city is known the world over as a carriage town. We do enjoy an enviable reputation in that direction. We are naturally very proud of it. This was the home of the Quaker poet—Whittier—and it is here that another author of note has her home—Harriet Prescott Spofford. It is a beautiful town, and contains a class of very conservative people," he says.

"I was the first to buy a gasolene car—in fact, the first to own and use a motor car of any kind. The townspeople, and the other doctors especially, watched 'my experiment,' as they termed it, very closely. Some of the I-told-you-so's were really provoked at the end of the first month because I had not been towed home by horse power.

"I have kept a very careful account of all expenses, and give them for the benefit of your readers. It had cost me for fifteen years to keep a horse about $240—namely, $200 for board and care, and from $25 to $32 for shoeing, according to how much sharpening was necessary through the winter. To this is to be added repairs to harness, carriages and sleighs, including repainting, varnishing, etc. I had used a bicycle for seven or eight years so as not to buy another horse.

"After using a horse in my practice for fifteen years at the above cost, supplemented with 20,000 miles actually covered on a bicycle, I sold the team, gave the bicycle to a boy and bought an Oldsmobile. I began using the auto about April 1, nine months ago. During that time I have had a stable team twice and rode on the electrics some in bad weather. I rode, as a matter of choice, day or night; it mattered not, the car was always ready to go. It never failed to start or to stop. I never frightened a horse, though I did compress four dogs. I did all my work and all my pleasure, covering 3,500 miles in all. The cost was as follows: For legitimate repairs, $1.95; gasolene, $25.95 (160 gallons), batteries, $7.20; a total of $35.10.

"There were some other expenses which you could not rightly charge up to the car. I attempted one day to pass over a road when the street railway company were cutting down a grade. I got the automobile into the sand so deep that both axles rested on the sand. I tried to pull out, and as a consequence stripped three teeth off the rear sprocket. I ran into the corner of the barn one day and twisted the steering device, had some tire troubles, express charges, did some experimenting, all of which cost $25.10. Now, if any reader wishes to add these two items they can easily see what nine months' automobiling has cost me.

"There is a chapter of great pleasure and solid comfort that could be added. All this labor and pleasure was not enjoyed by the lone operator. Selfishness is not an attribute of the true automobilist. That broad, inward manliness knows no bounds of pleasure when he is cognizant that he is making others happy. The open country is ahead of you, with a knowledge that your car experiences no fatigue. A winding ascent makes the exhaust clear and resonant, but there is no hill without another side. The fragrant blossoms and bending clover of spring but ushers you into the heart and toil of midsummer. The poor beast of burden halts beneath the inviting shade of the wayside elm. You cast a pitying glance at the half dead animal while on rushes your beast of steel. The summer breezes brush the perspiration from your brow. The ten miles falls into the embrace of the twenties, and the fifties soon clasp hands of one hundred, and it has been only a pleasant seven or eight hours' trip. Home again, and would you know you had inhaled so much pure atmosphere?

"Dollars and cents is not all a man should count. How much can you obtain of this new element of life in addition to the dollars and cents saved? The automobile rightly handled on the road is an educator. The frail man and timid woman are not going to be killed outright. We can illustrate to them that we want only a little piece of the road and they can have the rest. We will be on our way, with them forgotten, while they are getting frightened. Go back to the horse? No! Not while the automobile takes me safely over thirty miles of country road by lamplight in two hours and ten minutes without a single stop. For what better service could you ask?

"The automobile is gently asking for better roads, for that is in exact accord with what it is doing itself. Every time it passes over your streets it improves the road there. It is an educator in many directions, and upon the shoulders of the operator rests the responsibility whether we take from or add to the results.

Studebaker's New Salesroom.

The handsome new Studebaker Building, at Broadway and Forty-eighth street, this city, is nearing completion. The building consists of ten stories, with lofty ceilings and spacious warerooms, and has on the eighth floor a large space which will be devoted to charging storage batteries for automobiles.

RECKONING THE COST

What it Means to Conduct a Metropolitan Garage—The Many Men Necessary.

What is the force required to "run" a modern garage and salesroom, say, in this city? How many men must be employed and how are their duties apportioned and the men kept busy and not allowed to "eat their heads off"?

The questions suggested themselves to the Motor World man last week as he was looking at the new Banker establishment in Thirty-eighth street, which was just having such finishing touches as rugs, etc., put to it.

"How many men does it take to run the place?" repeated Manager Wridgway. "Well, at the present time we have twenty, and are still adding to our force.

"They are divided into repairmen, storage department men, salesmen, demonstrators, etc., and each has certain duties assigned to him. With regard to the repairmen, their duties are explained by the name. The storage department men look after the cars left on storage, wash and clean them, lubricate, fill the supply tanks, etc.

"The salesman is almost always a demonstrator as well—that is, he can take a car out and run it as well as talk it. But we seldom send out a demonstrating car with only one man—besides the customer—in it now. It takes two men to do this right.

"Yes, it's too much to expect a man to do both," interjected George A. Banker, who had run over from Philadelphia for the day. "If he gives his attention to the running of the car he can't talk as he should, and if he works it the other way, giving his arguments the preference, he necessarily neglects the management of the car; and it is most important that it should be run just right at such a time.

"On this account we usually send out a car with two of our men. One of them runs it while the prospective purchaser sits beside him. The 'talker' takes the tonneau seat, and by leaning forward he has the buyer's ear. Thus he can talk as he pleases—about automobiling in general, descend to particulars or explain how the car is operated and controlled, the functions of the various levers, etc. We find that this way works much better than the old one."

Koehler Enlarges.

Alterations now being made will double the space which the H. J. Koehler Sporting Goods Co., Newark, N. J., will devote to the automobile branch of their business. Their building has a depth of 190 feet, and half of the two lower floors will be devoted to the sale, storage and repairs of automobiles. A complete stock of sundries, clothing, etc., is also carried. The Rambler and Waverley cars are sold, and the concern is open to take on another popular priced touring car.

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Conrad Gasolene Automobiles

Will be First Shown at New York Automobile Show, January 17 to 24, and Later at Chicago Auto Show, February 14 to 21.

...RUNABOUT...

8 H. P. Double Cylinder Vertical Motor in Front. Sliding Gear Transmission. 2 Speeds and Reverse. Wheel Steer etc.

PRICE, $750.00.

2 MODELS

Will be Shown in Detail in Subsequent Issue of this Paper.

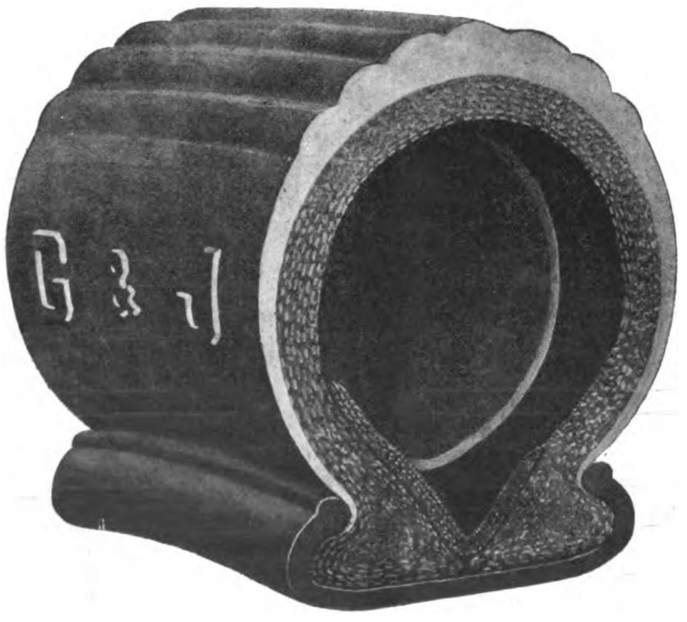
Touring Tonneau

12 H. P. Vertical Double Cylinder Motor in Front, Sliding Gear Transmission, 3 Speeds and Reverse. Wheel Steer. Wood Artillery Wheels 30 x 3½. Detachable Tires. PRICE, $1250.00.

CONRAD MOTOR CARRIAGE COMPANY,

1411-1417 Niagara Street, BUFFALO, NEW YORK.

CATALOGS AND AGENTS PROPOSITION WILL BE SENT ON REQUEST.



MADE FOR THOSE WHO WANT THE BEST.

The corrugated tread G. & J. Tire is detachable, double tube, and can always be permanently repaired.

It is made from the best materials, is easiest riding and longest wearing. The best automobile tire is the cheapest.

G & J TIRE CO.

INDIANAPOLIS, IND.

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CAUSES OF TROUBLE

Many of Them Due to the Operators as was Brought Home to This One.

"It is frequently asked what part of an automobile needs the most repairs. This can only be answered by saying that it depends on who is using the motor car, for one person will wear one part, while another person will wear the machine in an entirely different part," says a well posted dealer.

"This is due to the method of handling. This may sound strange, but I have found it to be true beyond the slightest particle of a doubt. I may cite an instance wherein two of my customers placed an order for two gasolene cars at the same time. They were built at the same time, side by side, and at the same place, and finished at the same time and delivered together. Buyer No. 1 hired some one to teach him how to handle his auto and how not to handle it, so that when he took his auto in hand he had been instructed to such an extent that he knew what he was about. While buyer No. 2 said he would run his own and save the expense of lessons, and did so.

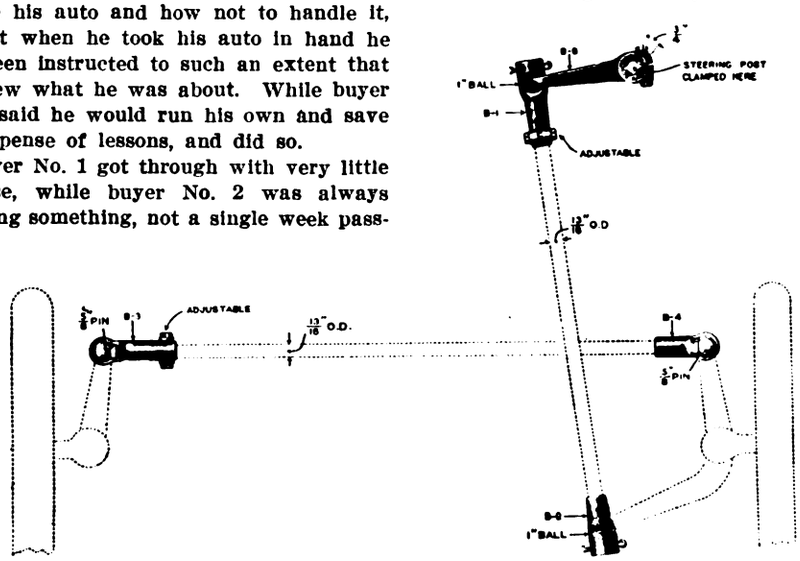
"Buyer No. 1 got through with very little expense, while buyer No. 2 was always breaking something, not a single week passing that he was not compelled to run his automobile in the repair shop and pay for what could have been saved by proper handling. No. 2's bills were always high, and he complained to buyer No. 1 about it, when No. 1 said: 'You certainly cannot be working correctly; you had better get some one to go with you to find out the faults and rectify them.' This was done, and after three months of running without instruction and falling into many errors which he should not have learned, he finally got an experienced operator to find out his faults and correct them.

"It was a great revelation to him to see his machine handled in an entirely different manner to what he was accustomed to handling it, and he was readily convinced that he was to blame for at least two-thirds of his breakages. For instance, he would rush up to his stopping place at the rate of ten or twelve miles an hour, then force both the emergency brake and band brake and stop within three or four times his vehicle's length, the jar due to the sudden stoppage of the machinery very naturally loosened the parts which were not made to stand such abuse, the emergency brake being on only to be used in case a very sudden stop were absolutely necessary. The parts which had become loosened were left to run that way, simply racking things to pieces.

"This is only one of the many things which prevent an automobile from giving satisfaction to the operator. Another very bad habit was in starting to jerk on the friction clutches of the auto in a very unpleasant manner and jarring both the person and the machinery to pieces. Imagine an engineer on a locomotive starting a train by throwing the throttle wide open and trying to run at the rate of twenty to twenty-five miles an hour in a few seconds from standing place, and you can see wherein the damage is done.

B & S's New Steering Connections.

An entirely new set of steering connections has been brought out by the Billings & Spencer Co., Hartford, Conn., and will hereafter be carried in addition to their already extensive line of automobile forgings. The new connections have been designed for cars of the so-called French type, and embody all the desirable features of the French patterns, together with several improvements in the way of adjustment. They are drop forged from the best steel for the purpose, and machined and hardened so that they reach the automobile manufacturer practically ready to apply to the vehicle. They are listed by the manufacturers in detail, so that users can get complete sets or the individual parts, as may be desired.



These connections are manufactured under Copeland's patent, and are carried in stock for immediate shipment.

The first of the cars completed at the new works at Trainer, Pa., a model G Searchment, which had the finishing touches put on last waak, will be sent to the show in this city.

Several Haynes-Apperson cars, en route from Kokomo, Ind., to this city, were burned in a freight car last week.

ILLUSTRATED BY BULLET

Peculiar Cohesiveness of Metals and How it is Avoided in Motor Cars.

"Take clean cut bullets and press the halves together with a twist, and the result will be the parts will stick together (cohere). The principle is important and correct. The machine designer has to see that in no case will any two pieces of metal in his machine be allowed to approach the condition of the bullet—that is, to come together forcibly and with a twisting motion, for what is true of lead is presumably true of other metals. Obviously the particles of a piece of metal stick together by virtue of some force exerted between them," says a well posted man.

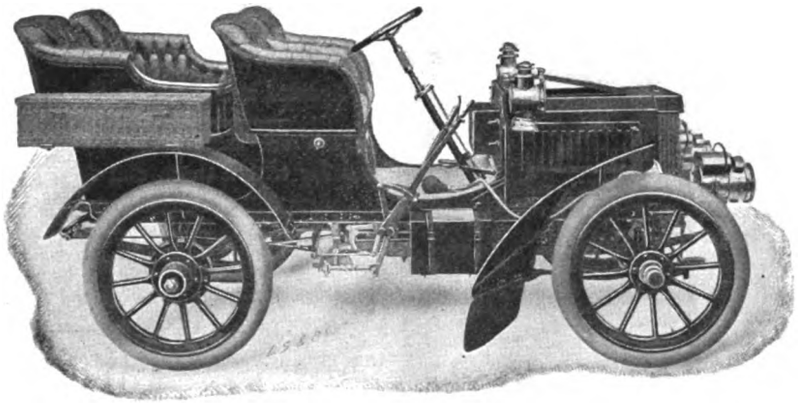
"Assuming, then, the predisposition of two similar metals to cohere or unite under favorable circumstances—namely, the coming into actual contact; that is, with nothing between them—we see why provision has to be made to keep them apart all the time. We do this by interposing a continuous film or layer of some substance that has the property of maintaining a very thin film under considerable pressure, and at the same time feed with facility through wicks, fine tubes, etc., such substances being called lubricants.

"It seems quite rational to infer that dissimilar metals are less likely to cohere than similar ones; water and oil, or mercury and oil, will not mix as readily as parts of the same liquid, and probably the same is true of solids. Whatever the attraction between the molecules, it seems plausible to believe the attraction to be stronger between those of a like nature.

"It is a fact well known that metals of the same kind will not work well together; they are more likely to seize and cut than dissimilar metals. A journal and its bearings are never of the same metal; it may be said that other reasons obtain—that the bearing must be softer, to take the wear, as being the easily replaced part, and also that the bearing metal has to be chosen for its heat conducting and anti-friction properties. All this is true, but the fact remains that where two are both made of hard metal they are made unlike. Hub liners are made of cast iron, bronze, etc., so that the steel hub shall not have to work against the steel box; also cast iron eccentric straps do better on a wrought iron sheave than do wrought iron straps; similarly cast iron crosshead shoes work better on steel guides than would steel shoes."

Following the example of the Automobile Club of America, the Rhode Island Automobile Club has completed arrangements with the storage station, corner of Pine and Garnet streets, adjoining the club quarters, whereby guests of the club may leave their carriages without charge for a stated period, and club members will be able to secure many other conveniences.

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Style "F," Type 6.

The Peerless Motor Car Co. were the first American manufacturers to adopt the Vertical Motor, mounted in front. One year hence all makers will follow their lead.

SEE OUR EXHIBIT, NEW YORK SHOW.

THE PEERLESS MOTOR CAR CO., Cleveland, Ohio

Dealers Can Control the Business

in their towns when they handle

The Spaulding

It puts money in your pocket and leaves more in those of your customers' than any automobile you can sell them. You are both happy.

Happiness is catching; that's why SPAULDING owners have lots of friends who increase the demand.



$700 THE PRICE. QUICK SALES THE RESULT.

YOU WANT TO KNOW MORE. WE WANT TO TELL YOU MORE. WRITE US RIGHT NOW.

Spaulding AUTOMOBILE AND MOTOR Company

BUFFALO, NEW YORK.

"IT STARTS FROM THE SEAT."

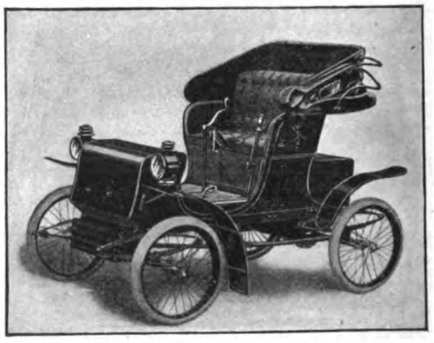
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GASOLENE AUTOMOBILE

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Speed—Reliability—Hill Climbing.



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NEW YORK,

FROM JANUARY 17th

TO JANUARY 24th.

Don't fail to see our Car.

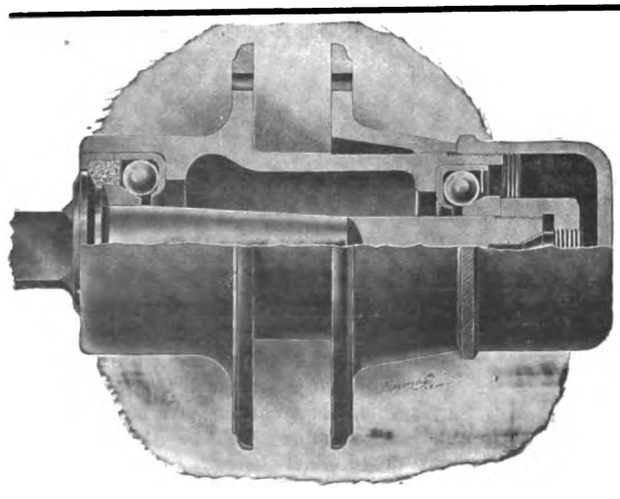
OUR MOTOR IS 7 HORSE POWER. HAS TWO CYLINDERS, IS NOISELESS.

Price at Factory $1200.00.

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NEW YORK OFFICE: 54-56 West 43rd Street.



Artillery Wheels.

We are now prepared to furnish these Hubs, Ball-Bearing and Key-Seated, for Automobiles weighing from 500 to 4,000 pounds.

Front Hubs are Ball-Bearing and are assembled on our well-known Steering Axles.

Rear Hubs furnished with Ball-Bearings or Key-Seated.

ALL RACES ARE GROUND IN POSITION IN HUBS. CONES AND CONE SEATS ON SPINDLES ARE GROUND TO GAUGE.

Hubs and Spindles are machined Right and Left.

WRITE US REGARDING YOUR REQUIREMENTS.

THE AMERICAN BALL-BEARING COMPANY, Cleveland, Ohio, U.S.A.

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WHY THE SUDDEN FLOP?

After Flaying Automobiles, Hearst's Paper now Essays to Act as Their Champion.

"Certain citizens feel very proud when they can interfere with the use of automobiles. Not only hoodlums and roughs entertain this peculiar pride. The pride afflicts men who should know better—drivers of trucks, motormen of streetcars and others, usually intelligent working men," says that erstwhile autophobe, the Journal, which has repented of its evil ways—in this particular—and is now cultivating the mechanically propelled vehicle.

"If you throw a stone at an automobile you prove, almost invariably, two things: First, that you are jealous of another man's pleasure or prosperity; and, second, that you are ignorant and do not look ahead.

"As to the jealousy—there is nothing to be gained by preaching about that. Some men make a plucky effort to achieve success, and others, especially the most ignorant, try to excuse their own failure by decrying the more fortunate or able. It is to the ignorance involved in attacks on automobiles that we wish to call attention.

"The man who to-day buys and experiments with the high power automobiles is a great public benefactor. He may not know it, and he may have no desire whatever to be of use to others. Nevertheless, he is one of the most useful of citizens.

"You must see clearly that in the future the automobiles will be of greatest value to the poorer classes of people. They will be made cheaply and kept cheaply. They will enable the small capitalist to compete with the railroad and streetcar monopolies. Already the automobile can carry passengers on good roads more cheaply than they can travel in the railroad cars.

"This cheapening of travel is important to the poor man. The rich man does not care what he pays for his railroad ticket, and he can keep horses, no matter what the cost. In a few years poor people will go on beautiful long trips through the country in cheap automobiles. In a very few years millions of men and women and children will reap the benefit of the present automobile experiments.

"Millions upon millions of dollars have been spent in devising and trying new automobiles. Many millions more must be spent. Who is going to spend that money if you treat as a criminal the man of wealth who buys and tries the immensely costly machines that are now the forerunners of the future automobile? True, the rich man buys the ten thousand dollar automobile for his own pleasure. But he need not be treated as a criminal on that account. And since his amusement means future welfare for all, why not encourage him instead of discouraging him.

"If you should succeed to-day in stopping the use of automobiles for pleasure, the automobile industry would die out, thousands of men would lose their work, and, what is infinitely more important, the entire people would be deprived in the future of a great blessing.

"In less than fifty years from now the working man, the mechanic and the laborer will go to their work from their cottages in the country in automobiles. You smile at this? Don't smile too confidently.



FUN IN AN OLDSMOILE.

"Do you remember when the present model of bicycles first came into fashion? Who used and paid for the first bicycles at $100 or more each? The rich men and women. Who made fun of the first bicycle riders, laughing at their sensible costumes, throwing tacks on bicycle paths, doing everything to delay the manufacture of the cheap bicycle by discouraging those who paid for the first experiments? You did, you who now laugh, or throw tin cans at the fast automobile did the same for the bicycle not so many years ago.

"If the owner of an automobile is reckless he should be punished. But he should be considered and treated as we treat the reckless driver or the reckless drunkard. There should be no foolish ignorance or jealousy to discourage his attempts to improve the horseless machines. As a matter of fact, the reckless automobilist will never be very numerous. For his recklessness threatens you only occasionally, whereas it threatens him all the time.

"One of these days the automobile will be the great blessing of the poorer classes. One of these days there will be a great union of highly paid, highly skilled mechanics making their living by the management of horseless vehicles. In a few years the millions of our citizens wil bless the makers and the buyers whose energy, or skill, or love of pleasure, or innate extravagance, made the cheap, safe, effective automobile possible.

"Therefore, when you see a man dressed in his goggles and furs ploughing along in his red or pink or purple or green machine, do not be foolishly jealous or irritable. Say to yourself: 'That man is doing good work, perhaps without knowing it. He is paying for the future comfort of the people.' If he goes too fast or recklessly, complain of him.

"But do not prove your own foolishness or jealousy by forcible interference, by vulgar abuse or by trying in any other way to check the growth of a great public necessity."

Spencer's Gasolene-Type Steamer.

Work on a steam car of thoroughly modern design, intended for Raymond Goodrich, of Hartford, Conn., and Captain C. M. Spencer, of Windsor, Conn., has progressed sufficiently to afford a good idea of its appearance when completed. It is being constructed at the Mansuy & Smith shops, in Hartford, and closely resembles the gasolene type of car.

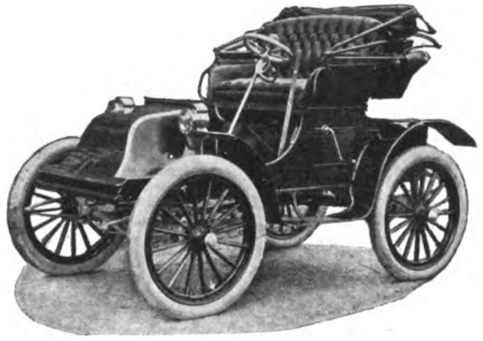
The new vehicle is one of particularly long wheel base, ten feet separating the forward and rear wheel centres. The tonneau will carry four persons and two may ride in the front seat. The capacity for oil and water is large, and the vehicle will have more power than most steam carriages, and the engine and boiler will be located forward under a bonnet.

Captain Spencer's engine arrangement and driving device will be employed, and a boiler of large capacity will furnish steam to the engine.

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THE HAYNES-APPERSON

is unique. It is its own type. It has proved the best for American roads, better than foreign types—better than the so-called "American type" of motor car. It is the oldest make in America—one of the oldest in the world—the most thoroughly developed.



It is interesting to note that the 1903 "Improvements" of the Paris Show have all been features of the Haynes-Apperson Car for years. Our throttle control and sparker with magneto is superior today to the best foreign practice; also our band clutch, free from end-thrust.

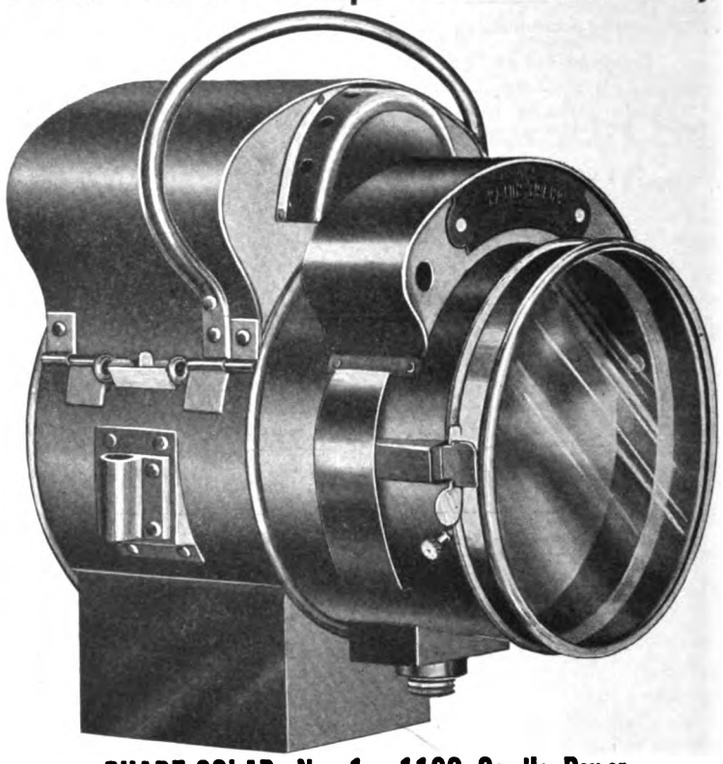
We have issued (in addition to our regular catalogue) an interesting booklet that tells why it is the best. Shall we put you down for one? You will greatly oblige us by naming THE MOTOR WORLD when you write. Catalogue free, too.

Runabout, $1200; Phaeton, $1500; Surrey, $1800.

TONNEAU—READY BY SPRING—PARTICULARS LATER.

HAYNES-APPERSON CO., Kokomo, Ind., U.S.A.

Solar Motor-Lamps Show the Way



PHARE-SOLAR, No. 1. 1160 Candle Power.

We make a Score of Other Styles. Space No. 3, New York Show.

BADGER BRASS MFG. CO., - - - KENOSHA, WIS.

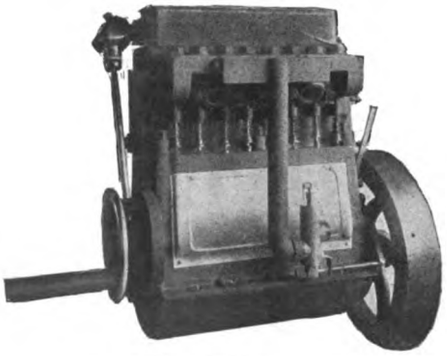
LIGHT. POWERFUL. RELIABLE.

EXHIBIT AUTOMOBILE SHOW.

FOR

Gasolene Motors

FOR TONNEAU AND EVERY OTHER STYLE VEHICLE.



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BUFFALO GASOLENE MOTOR CO.,

9 Bradley Street, BUFFALO, N. Y., U. S. A.

EXHIBIT SPORTSMAN'S SHOW.

STEADY. SPEEDY. ECONOMICAL.

You Cannot Get More for Your Money

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The Motor World

In which each week appears a record of all that is best, brightest and newest in the world of mechanical traffic.

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CARE AND REPAIR OF TIRES

Little Things That may be Done to Lengthen Their Life and Service.

Tire care and repair is a matter that merits much more attention than it usually receives.

After a car has been run for a hundred miles or so, there will be some cuts, some large and deep, some small, in the tires. An hour or so should be spent in cleaning them out and plugging them with cotton wool and solution, or, better still, with a special rubber that can be obtained for the purpose. If these cuts are neglected they take in the wet, with the result that the tread becomes loose about the spot and peels off, and the only remedy is to send the cover away and have a new piece vulcanized in, or, if the damage is very bad and in several places, to have a new tread fitted. All this costs money, and when one recollects that the value of a set of average tires is about upwards of $100, it is hardly worth while to spend more money when a little care would have saved it.

If a bad cut occurs leaving a fair size hole in the outer cover, it is perfectly useless to put on a piece of canvas only a little larger than the hole. The repair must be thoroughly effected in the following way: Supposing there is an inch gash in the cover, the space round the cut should be cleaned for about six inches each way. Solution it and leave to dry. Three pieces of canvas will be required, and the first should measure about 8 in. This should be affixed, bringing the canvas down to the beaded edges. The next piece should project an inch or so over the first, lengthwise, but need not go right down to the edges of the cover—say about half an inch off. The last piece should project an inch or so over the second and should also fall a little bit short of the edges. Three thicknesses of canvas are now fixed, and, so far as the inside is concerned, there is no more to be done. The gash should be cleaned out and plugged with special rubber. This kind of repair is the only one that will effectually hold a nasty cut (short of sending the cover away to have it repaired), and it should be borne in mind by those who put fancy little pieces of canvas over big gashes.

Tube repairs require time to make them a really satisfactory job, especially large ones, so it is best to do these at home, carrying spare tubes. It will be found a very good plan, after cleaning the tube for a patch, to rough it well; a very fine wire brush is the very thing for the purpose. This roughing will cause the solution to sink slightly into the rubber, and consequently the repair is far stronger. Patches supplied in repair outfits are always roughed on the side intended for solutioning.

The security bolts, which help to retain the cover in position, are very often neglected. They should be kept screwed up tight at all times.

Dust caps should always be kept on valves, as most valves leak slightly, and as the dust cap has a washer inside, this leakage is prevented. Automobilists who are fond of applying the brakes suddenly should recollect that they have tires. Skidding a tire along a rough road is one of the worst things possible for a cover. Oil splashing from the engine often reaches the front tires, and as oil is one of the worst enemies of rubber, this evil should be remedied by fitting up light guards. If these facts are borne in mind and acted upon, it will be found that pneumatic tires are not so black as painted.

Looking Under the Paint.

That it is always a good idea to look under the paint, i. e., to make more than a superficial examination of a car bought at second-hand, is shown by the following incident:

"We had a car brought into our garage a few days ago to have some slight repairs done to it," said a tradesman. "The owner instructed us to send the car up to his house, as he had only just purchased it and could not drive it. The car was taken out of the garage and the engine started, and just as the man was setting off, the main arm of the steering gear broke clean away. An examination of this part showed that the three-quarter-shaft, which controlled the steering, had been recently broken off, and it had been repaired by simply putting the two surfaces together and soldering it round the edges. Of course, a repair effected in this manner is nothing short of criminal, and the owner of the car may consider himself very lucky indeed that it did not come off when he was going at twenty miles an hour."

The Motor Language.

"In motor language there has sprung up some curious misuses of terms and forgetfulness of their meaning," says a transatlantic contemporary. "For instance, one constantly hears the expression—'chauffeur,' and we frankly admit it has appeared in our columns on several occasions. But the word 'chauffeur" is really the French term for the fireman on the footplate of a locomotive, and designates what in English we call the 'stoker,' or 'fireman.' So when we call the lady motorist the 'chauffeuse' we might in English call her 'stokeress,' which does not sound in the least pretty. We talk about a sportswoman, or a fisherwoman; why not talk, then, about a motorwoman? Or, if we want to adopt a combination of French and English, might we suggest a word with a prettier sound—'motoriste'? The only case in which the term 'chauffeur' might be correct is in the case of a Thornycroft lorry, or any other motor car in which live coal or coke is used.

LEGAL TEST OF GASOLENE

Demonstration Made for Court's Benefit Proving Safety of the Fluid.

Evidence offered and accepted in court is now on record to show that gasolene is not the dangerous stuff which so many commonly consider it to be. The evidence was submitted in a case of lawsuit in England in which the plaintiff testified that a lighted cigarette had caused the ignition of some gasolene that was being poured into a tank. The defendant, a motor maker, offered in rebuttal a sworn statement of a list of experiments, and these were substantiated as having been witnessed by an official from the Royal School of Mines. The tests made were as follows:

1. A lighted match placed at the opening of a new two gallon can of gasolene merely caused a small flame an inch long, which could be extinguished with the point of a finger.

2. Gasolene was then poured into an open vessel and a lighted cigarette dropped into it. Result: It was at once extinguished.

3. A lighted cigarette was then smoked vigorously from within two feet above to a quarter of an inch of the gasolene; also all around and underneath the vessel, but no ignition occurred.

4. A small quantity of gasolene was then poured on the cigarette while still smokinfg; still no ignition occurred.

5. A case was then made hot and the gasolene poured into it, so that it would vaporize more quickly; a lighted cigarette was then smoked into it, as in case No. 3, but failed to cause ignition.

6. Two vessels were placed eighteen inches apart, with gasolene in each, so that the affinity of the vapor of the gasolene from one vessel to the other would meet; a lighted cigarette was then smoked between the two and at the likeliest part where the gasolene vapors would meet, but still no ignition occurred.

7. Gasolene was forced under pressure through a fine hole, so as to spray the gasolene, and a cigarette smoked in the spray, but still no ignition followed.

8. An explosive mixture was then made up in a vessel, and a cigarette smoked around and inside. No result; but a light dropped in caused an explosion.

Each of the above experiments was tried a great number of times, and it was impossible to light the gasolene by the fire or sparks from a cigarette.

The vapors of gasolene, being heavier than the atmosphere, never rise, but fall and run along the ground or surface on which it has been spilled.

For German Army Use.

In the new Germany army estimates is an item of $25,000 for experimentation with field automobiles, which are stated to have shown themselves of permanent value.

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ABOUT ELECTRICITY

Some of the Rudimentary Whys and Wherefors Making Plain the Process of Generation.

Electricity is a subtle form of energy which may be called into existence in many ways, but always at the expense of some other form of expended energy or the destruction or transformation of some other substance.

Once generated the current tends to dissipate itself, and will take the first available path to "earth," so that to get useful work from the current it is necessary to lay conductors to the place where the work is required to be done, and to prevent the current from leaking away from its proper path the conductor is incased or otherwise protected by insulation. All substances in nature are conductors or insulators in a degree, but some are much more effective than others; thus all the metals are conductors, and, although copper does not rank highest in the list, it is usually employed on account of cost, i. e., higher efficiency conductors are only found among the precious metals, though for some purposes, such as land telegraphs, iron wire is used on account of its still lower cost. Insulating substances in principal use are india rubber, gutta percha, porcelain, glass, vulcanite, ebonite, silk, etc.

Thus the conductor which may be of copper is wrapped with cotton or silk, and then incased in one or more layers of rubber or gutta percha and further wrappings of cotton, according to the degree of insulation required, or the wire may be carried through midair on porcelain insulators as in the telephone. But whatever the method of insulation, the object is the same, to convey the current from the generating point to the point where it has work to do with as little loss as possible from leakage.

The next consideration is resistance, for if the conductor is of insufficient area, and of great length, the quantity of current cannot be passed, so that a thicker wire must be substituted, and on short distances it is policy to use wire of ample area, but where the distance is great the cost of the copper becomes prohibitive, and so the quantity of current is decreased and the intensity increased, the same result being arrived at.

This decrease of current and increase of intensity may be likened to water flowing through a pipe; a pipe of certain size can deliver only so much water an hour at a certain pressure, but by increasing the pressure and causing the water to flow faster the quantity discharged may be increased according to the increase in pressure. The electrical term signifying pressure or intensity is the volts, and the term ampere denotes quantity, and the product of the two is the watt, thus with a given conductor it may be necessary to use a pressure of ten volts to transmit five amperes of current, equalling fifty watts, or the dynamo or battery may give a current of ten amperes, at a pressure of five volts only, the electrical energy expended being the same in either case. Certain electrical phenomena demand the employment of very high voltages, but small amount of current, the spark which fires the charge in a motor being a case in point.

The lighting of an arc lamp, on the other hand, demands a considerable quantity of current compared with the pressure employed, these variations in quantity and pressure being accomplished by the manner in which the battery is coupled up or the dynamo wound. The most simple form of electrical generator is a single cell in which a metal (usually zinc) is consumed by an acid, for if a zinc rod be immersed in dilute sulphuric acid it will be rapidly consumed with violent ebullition, and hydrogen gas given off, and if a carbon rod be immersed in the same jar, but separated from the zinc, and copper wires attached to each, an electric current will flow from the zinc rod through the liquid, which is a conductor, to the carbon rod, and so through the wire conductor to the zinc rod when the ends of the two wires are in contact.

If now some instrument be connected to the two wires the passage of the current may be detected, but one cell will not give any great amount of power for doing actual work, though it may be made to ring a bell, consequently the cells are multiplied until the requisite amount of current is obtained, and the manner in which the cells are connected will determine the ratio between quantity and pressure.

Of course, the simple form of cell described is not what would be actually used, but merely serves to explain the action. Where large quantities of current are required, or very high intensity, the battery method is not suitable, as an enormous number of cells would be required, and both expense and trouble would be prohibitive, so in this case a dynamo is used, and according to its size, speed and the manner in which it is wound, any desired quantity or intensity of current may be procured to suit the particular work in hand, whether it be ringing a bell, lighting a glow lamp or transmitting a thousand horsepower.

What Causes the Outcry.

"Sometimes I almost think that the outcry against automobilists is excusable, if not justified," exclaimed a man who is addicted to the pastime to the Motor World man the other day.

"One reckless or inconsiderate chauffeur can do more to create an unfavorable impression than ninety-nine of us can to remove it, try as we will. In fact, it is the one offender and not the ninety-nine innocent users that occupies the centre of the stage and excites animosity. He does the harm and usually goes scot free, while we suffer for his misdeeds.

"There was an instance of the kind that came under my notice a day or two ago. I was walking down Broadway, and when near the crossing of Sixth avenue and Thirty-third street an automobile shot down the street at a speed that must have been very close to twenty miles an hour—not a policeman's twenty miles, nor yet a chauffeur's when he wanted to show how fast his car was, but a real mile in three minutes clip as would have been shown by a Jurgensen watch.

"Now, you know what that crossing is like. There are three streams of traffic—street-cars, carriages, trucks and automobiles, and pedestrians from the Macy, Saks and other nearby stores, promenaders, etc., enough to keep the policeman on guard at the corners busy.

"All other wheeled traffic was proceeding at a slow pace, but this automobile—which, as I afterward learned, came from one of the group of garages in Thirty-eighth street and was in charge of a rather greasy looking, leather coated chauffeur—whizzed by as if it had been an ambulance or a fire patrol wagon. In and out it weaved, cutting close to trolley cars, frightened women and angry men, while people on the sidewalk, myself among the number, stopped to look after it.

"The comments were quite audible, and I almost felt like adding some of my own. If the car, which was a big tonneau, with only one man in it, had struck any one I would cheerfully have borne testimony against it."

AUTOMOBILE
MOUNTINGS
...IN...
Polished Brass.

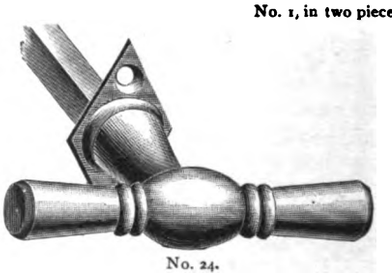
Metal Mouldings, Tonneau Door Fasteners (6 styles), Door Locks, Key Hole Covers, and many other articles.



Inside Handle Finishing Nuts and Washers.



No. 1, in two pieces.



No. 24.

TONNEAU DOOR HANDLES,

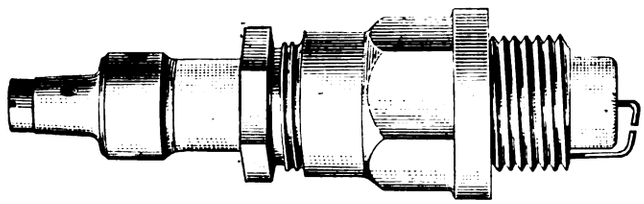
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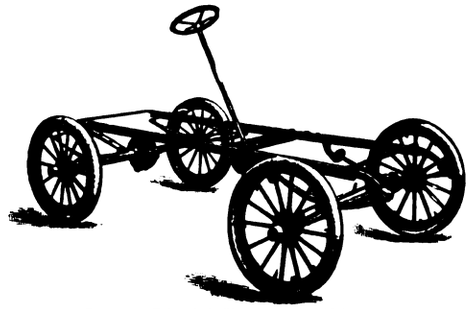
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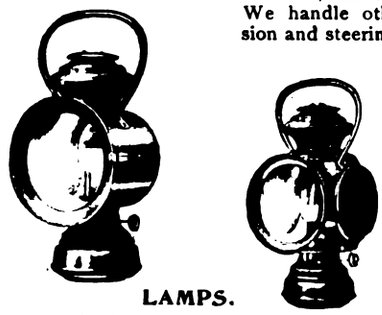
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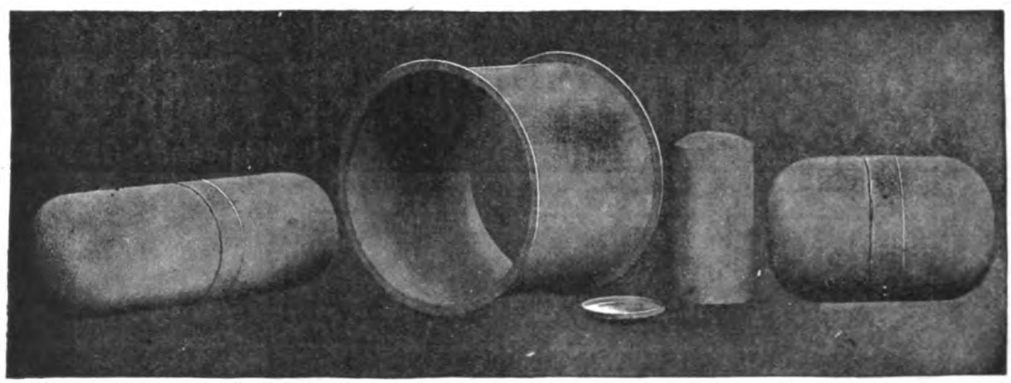
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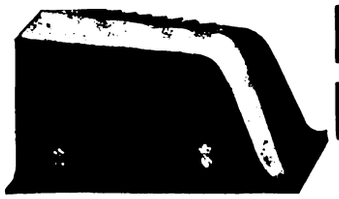
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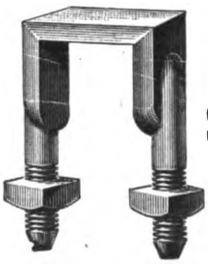
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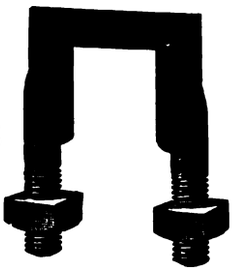
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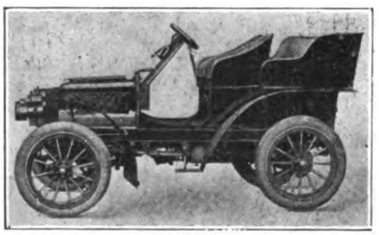
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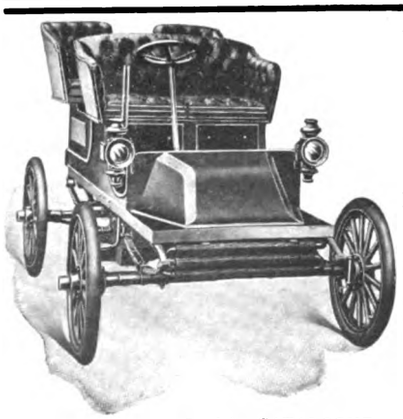
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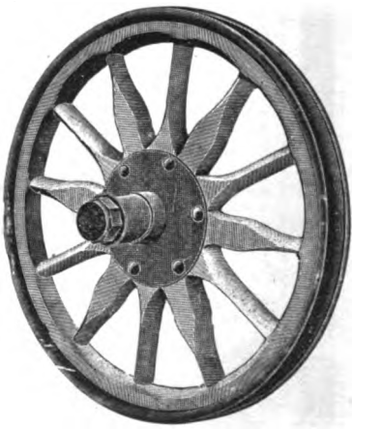
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The Week's Patents.

717,607. Electrode for Storage Batteries. Leonard Paget, New York, N. Y., assignor to Charles Coster, New York, N. Y. Filed September 8, 1899. Serial No. 729,837. (No model.)

Claim—1. A plate adapted to form a storage battery electrode and consisting of a thin corrugated plate of compressel aborescent crystals of lead, substantially as described.

717,608. Method of Preparing Storage Battery Electrodes. Leonard Paget, New York, N. Y., assignor to Charles Coster, New York, N. Y. Filed October 19, 1899. Serial No. 734,049. (No model.)

Claim—1. The process of making a plate adapted to form a storage battery electrode, which consists in pressing finely divided lead into a thin corrugated plate, substantially as described.

717,609. Storage Battery Elecrrode. Leonard Paget, New York, N. Y., assignor to Charles Coster, New York, N. Y. Filed January 10, 1900. Serial No. 911. (No model.)

Claim—1. A storage battery element consisting of a conducting support and finely divided lead on said support compressed to a density approximately that of sheet lead, substantially as and for the purpose set forth.

717,610. Storage Battery and Method of Preparing Electrodes Therefor. Leonard Paget, New York, N. Y., assignor, by mense assignments, to Charles Coster, New York, N. Y. Filed January 10, 1900. Serial No. 912. (No model.)

Claim—1. A storage battery element in which the active material consisting of a thin corrugated plate of compressed arborescent crystals of lead and a frame of elastic non-conducting material about the edges of the small plate, substantially as described.

717,688. Gas and Air Regulating Valve. Elmer E. Kerns, Bradford, Pa. Filed May 19, 1902. Serial No. 107,992. (No model.)

Claim—1. The combination with a valve casing provided with an inlet and an outlet opening and a valve plug rotatably mounted within said casing and provided with graduated openings adapted to be brought into register with the outlet opening of the valve casing; of a mixing chamber communicating with the outlet opening of the valve casing and provided with an air inlet opening, an air regulating valve for said mixing chamber, and a connection between the air regulating valve and the valve plug, whereby when the latter is operated to regulate the flow of gas through the outlet opening, the air regulating valve will also be operated to control the admission of air to the mixing chamber, substantially as set forth.

717,753. Hydrocarbon Burner. William J. Lane and George Lane, Poughkeepsie, N. Y. Filed May 8, 1901. Serial No. 59,328. (No model.)

Claim—1. A hydrocarbon burner comprising a centrally disposed tube, having one portion of its length located outside of the combustion chamber in which the burner is situated, a series of spaced lateral tubes so arranged as regards each other as to permit but thin currents of heated air to pass upward on each side of said tubes, and a tube located out of the combustion chamber within which the burner is situated, but in such position as regards said burner as to be heated thereby, said tube open at one end to the atmosphere and communicating at its opposite end with the portion of the centrally disposed tube which is exterior to the combustion chamber.

717,823. Steam generator. Jackson Deneal, Toledo, Ohio, assignor of two-fifths to Stephen Brophy, Toledo, Ohio. Filed December 23, 1901. Serial No. 86,914. (No model.)

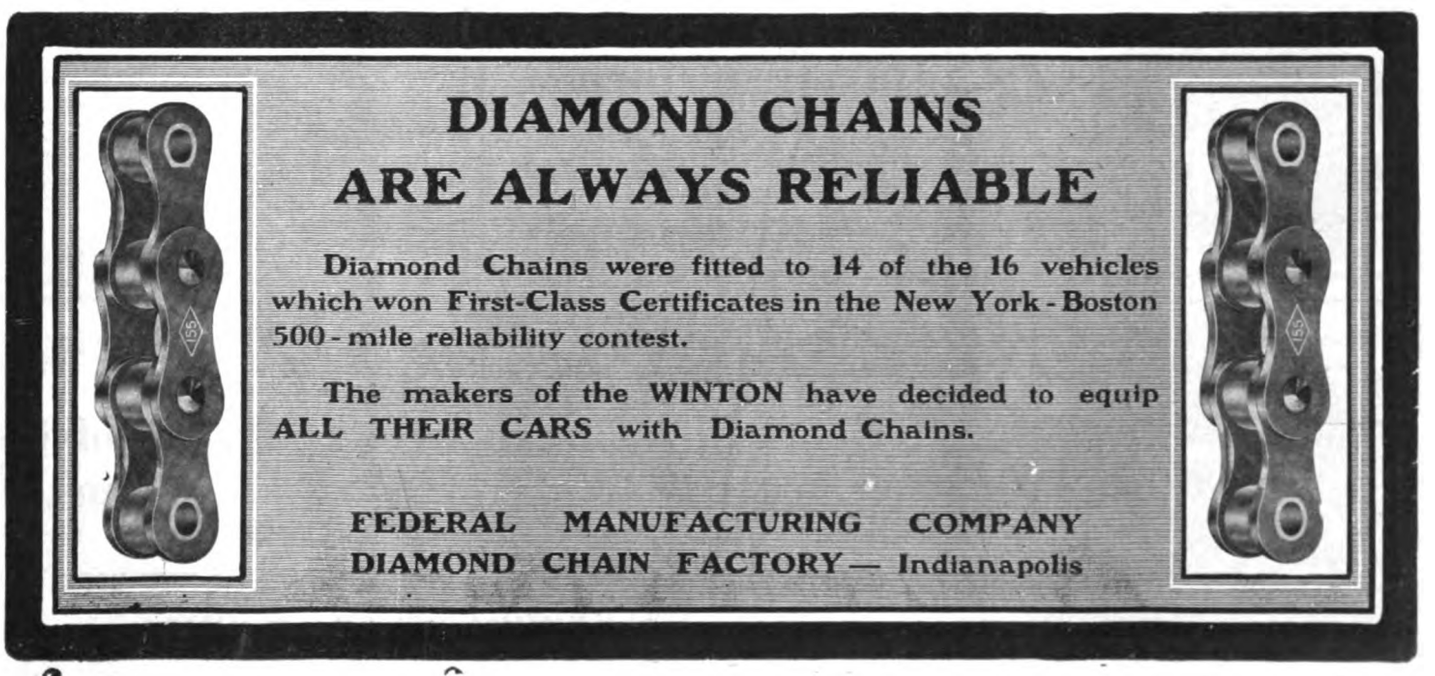
Claim—1. In a steam generator, the combination of an outer and an inner plate having equal centre portions parallel and horizontal, and end portions of equal width, the end portions of the inner plate being bent at right angles to the central portion and of the outer plate curved outward and downward parallel with the end portions of the inner plate; end plates closing the top, side, and bottom openings between the outer and inner plates and riveted thereto around their edges, and forming with the outer and inner plates a boiler shell having vertical rectangular water legs opening into the water and steam space between the horizontal central portions of the outer and inner plates; plates secured to end plates of the legs and forming with the inner plate a combustion chamber for the shell; a flue for the combustion chamber extending centrally through the top of the shell; parallel rows of inclined water tubes connecting opposite legs; plugs in the outer plate opposite the end of the tubes; staybolts at intervals through the outer and inner plates of the shell and secured thereto; a water feed pipe connected to one or more legs of the shell and a steam pipe or pipes tapping the steam space.

717,902. Electric Igniting Device for Internal Combustion Engines. Frank R. McMullin, Highland Park, Ill., assignor to McMullin Motive Power and Construction Co., a corporation of Illinois. Filed February 7, 1902. Serial No. 93,104. (No model.)

Claim—1. In an igniter for gas engines, the combination with a stationary contact of a movable contact, and means for moving said movable contact, comprising a lever in operative association therewith, a ratchet arranged adjacent to the lever, a moving member actuated by the engine, an adjustable pawl carried by the moving member engaging the ratchet, and an adjustable pawl carried by the lever, likewise engaging the ratchet.

717,913. Water Tube Boiler. Herbert E. Penny, Minneapolis, Minn., assignor to W. S. Nott Co., Minneapolis, Minn., a corporation. Filed March 7, 1902. Serial No. 97,037. (No model.)

Claim—1. In a steam boiler, the combination with outer and inner vertical shells providing an annular water leg intermediate, their lower portions and an annular steam space intermediate their upper portions, the outer shell being of uniform diameter throughout its height and the inner shell tapering gradually from its base to its top; of a series of separately removable tube sections arranged in parallel vertical planes, each tube section comprising vertical headers and connecting tubes; and means for detachably connecting such tube sections with the lower portion of the water leg and



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the upper portion of said steam space, substantially as set forth.

717,827. Spring Tire for Vehicle Wheels. William T. G. Ellis, Glasgow, Scotland, assignor to Thomas Alexander Jebb, Glasgow, Scotland. Filed December 5, 1901. Serial No. 84,800. (No model.)

Claim—1. The zigzag wire springs formed with deep lateral indentations and projecting edges for attachment to the rim of the wheel; in combination with a suitable cover in which said springs are inclosed and a wheel rim formed with peripheral flanges and channels into which the projecting edges of the springs are sprung, substantially as described.

717,914. Steam Generator. Herbert E. Penney, Minneapolis, Minn., assignor to W. S. Nott Co., Minneapolis Minn., a corporation. Filed April 26, 1902. Serial No. 104,754. (No model.)

Claim—1. In a steam generator, in combination; outer and inner concentric shells providing a water jacketed firebox, the inner shell being the shorter and provided with a crown sheet; a head and a depending funnel shaped smoke flue with a closed base covering the outer shell and providing an intermediate steam space; a series of removable tube sections arranged in parallel vertical planes, each tube section comprising a pair of opposite vertical headers and inclined tubes connecting them, the inclinations of the tubes being opposite in adjoining sections; detachable pipe couplings connecting the lower ends of the headers with the water leg and detachable plugs connecting their upper ends with the crown sheet; and a series of vertical flues connecting the crown sheet and smoke flue base for the passage of the products of combustion from the firebox to the smoke flue, substantially as set forth.

717,990, Valve Seat for Explosive Engines. Winfred M. Harvey Denver, Col. Filed August 18, 1902. Serial No. 120,005 (No model.)

Claim—1. The combination with a valve, of a valve seat comprising a projection surrounding the passage to be controlled, two rings applied to the opposite surfaces of the projection and normally projecting beyond the same, to form a groove or channel, and a suitable packing located in said groove, the rings being automatically adjustable by the action of the valve, to compensate for the wear of the packing, substantially as described.

718,045. Electrical Storage Battery. Henry K. P. Barham, Portsmouth, England. Filed December 2, 1901. Serial No. 84,489. (No model.)

Claim—1. In a device of the character described, a series of strips of metal each folded upon itself with saturated absorbent material between the folds thereof, and forming a tray intermediate the ends thereof.

718,064. Valve Gear for Gas Engines. John C. White, Decatur, Ill., assignor to William L. Oakes, Decatur, Ill. Filed March 26, 1902. Serial No. 100,133. (No model.)

Claim—1. In a valve gearing for engines, the combustion of an inlet valve, an exhaust valve, a lever pivoted only to said valves, to one valve at a point between its ends and to the other valve at one end, and actuating means applied to the other end of the lever.

717,754. Hydrocarbon Burner and Attachment. William J. Lane and George Lane, Poughkeepsie, N. Y. Filed May 12, 1902. Serial No. 106,972. (No model.)

Claim—1. A hydrocarbon burner comprising a casing, a mixing chamber, a portion of which is within the casing and a portion of which is external to the casing, a supply tube for the mixed gas and air extending through the portion within the casing and into the portion external to the casing, and a series of transverse burner tubes communicating with that portion of the mixing chamber within the casing.

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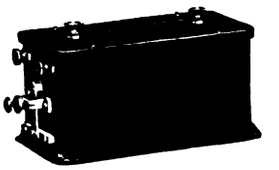
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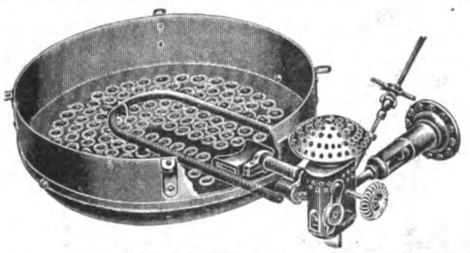
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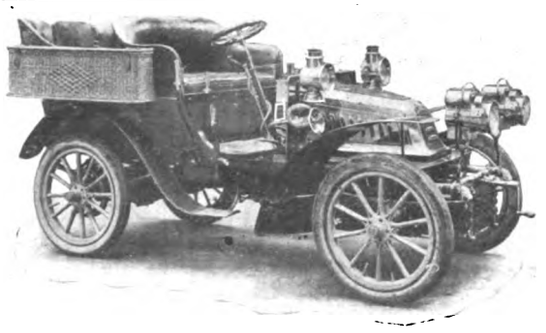
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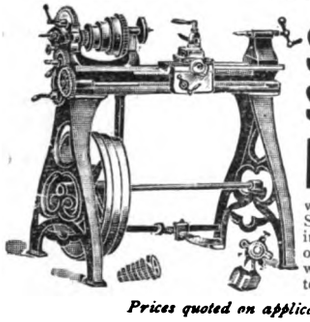


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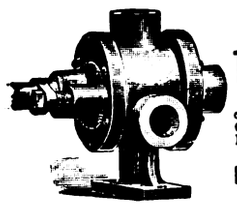
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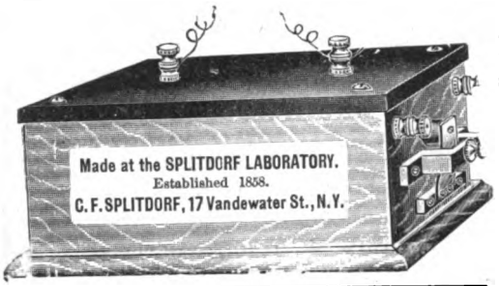
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FOR SALE—10 h-p. Autocar Tonneau, 1903 model, new and in fine running order; cost $1,825; with gas lamp, baskets, etc. Will sell complete, reasonable offer considered. Address AUTOCAR, 12 W. Read St., Baltimore, Md.

FOR SALE—Or will trade National Park Trap, 40 cell battery. A 1 condition, used but little. New extra large solid tires and artillery wheels. Rig cost as it stands over $1200. Will trade for good gasolene machine. MATTHEWS & CO., Bascom, Ohio.

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Are building for the Automobile Trade the following sizes and styles of **Gasolene Engines.** Single Cylinder 4x4½. Double Opposed Horizontal, five sizes, 6, 8, 10, 12, 15 h. p. Double Cylinder Vertical, 3 sizes, 6, 8, 15 h. p. Four Cylinder Upright, 4 sizes, 12, 18, 22, 30 h. p.

Write and tell us your wants. Remember that the quality will remain long after the price is forgotten.



THE AUTOGAS
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80 per cent. more efficiency than any other.

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Small Carriages, $12.00, Medium, $15.00, Large, $18.00
Electric charging, as per meter.

We have a thorough equipment. Inspection invited.

METROPOLITAN MOTOR CAR CO.,
154 East 57th St., New York.

$550 Mobile

Special Circular, giving Improvements.

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Acme Safety Steam Throttle Valve

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CAN BE APPLIED TO ANY STEAM VEHICLE.

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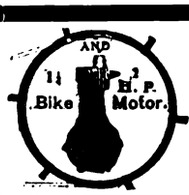
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Patentees and Sole Manufacturers.

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Bought, Sold and Exchanged.

If you're looking for a good car for little money now is the time and this the place to get it.

If you have a car to dispose of ditto. Cash or trade. Call or write us.

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Dyke's Castings of Bike Engines.
$7.50 UP.

Full Line Bike Parts.

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Send stamp for Catalogue.

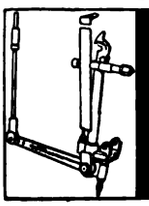
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CHARRON, GIRARDOT & VOIGT CARS MADE IN AMERICA.



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133 to 139 West 38th Street,
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UNDER ENTIRE NEW MANAGEMENT.

Now making extensive alterations and improvements.

LOOK FOR SPECIAL ANNOUNCEMENTS AFTER NEW YORK SHOW.

Get a Good Night's Rest

THIS ALWAYS ASSURED

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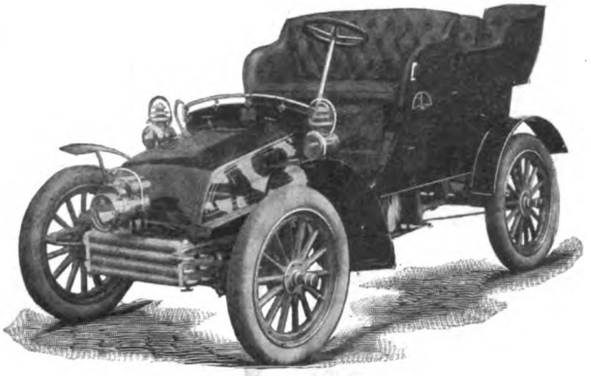
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Regulate the heat, light and ventilation to suit your convenience.
Every necessary toilet convience in your room.

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New to the trade, but thoroughly tested.

MANUFACTURED

by an established concern with a reputation to sustain

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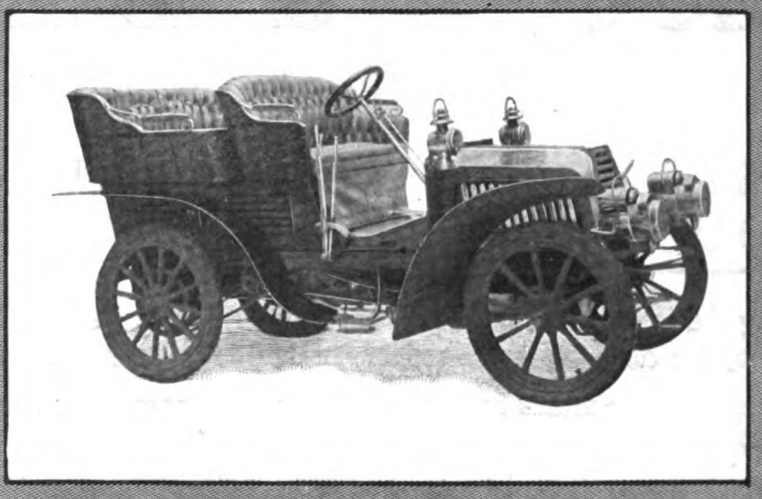
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8 And 15 H. P.

Under reigning conditions in this country, no matter how much money may be spent for a vehicle, it is invariably known as the product of the factory rather than the property of the owner.



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Our pattern book enables customers to choose from hundreds of original body designs, amazing to those who fancy that in the vehicles seen to-day the possibilities of design are exhausted.

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WILL BE GREATLY ENHANCED BY THE USE OF

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PNEUMATIC TIRES

The ORIGINAL and "MODEL" TYPES of SINGLE AND DOUBLE TUBE TIRE CONSTRUCTION

Appreciating the fact that requirements vary as to Single Tube and Detachable Tire Construction, we offer the most reliable of both types—*The Honest Standards.*

THEY WERE BEST YEARS AGO, AND YEARS OF INTELLIGENTLY PERSISTENT, CAREFULLY DIRECTED EFFORT HAS MADE THEM BETTER TO-DAY.

Where Quality is desired—where Comfort, Durability, and Protection against Annoyances is wanted—where All-'round Satisfaction is demanded—these tires should be adopted. Let us prove this to you by sending you signed statements from some of the most prominent makers and users in this country.

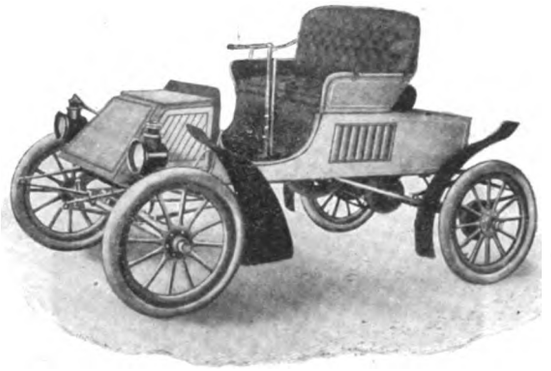
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is an impossibility when a properly designed governor is a part of your motor carriage equipment. That used on the

Rambler Touring Car



has stood the test of a season's use under all conditions, and gives ignition at exactly the right moment. The new constant level automatic carburetter ensures a perfect mixture, and the result is ample power to carry the Rambler anywhere. Equal to the $2500 kind for service and wear, but sold

F. O. B. KENOSHA, WISCONSIN, AT $750.

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THE ORIGINAL AMERICAN CLINCHER

Our construction, our pattern and our style of rim arc recognized as the standard by all licensed makers of clincher tires.

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A model automobile tire.

All repairs or adjustments made at the following branches, which carry a full and complete line of standard sizes of tires and parts constantly on hand:

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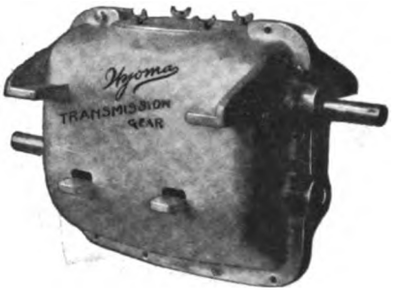
Wyoma Automobile Gasoline Motors

French Type. Water Cooled.
8 H. P., Single Cylinder.
15 H. P., Double Cylinder.

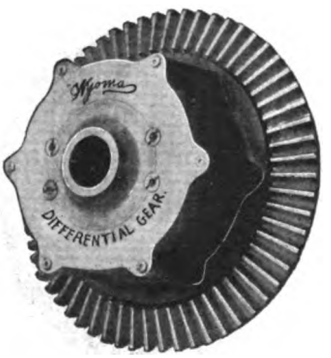
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3 speeds forward, 1 reverse. New System; no bevel gears. Gears always in mesh. Ball thrust at each end of shaft. Enclosed in aluminum case. Will transmit up to 20 H. P.



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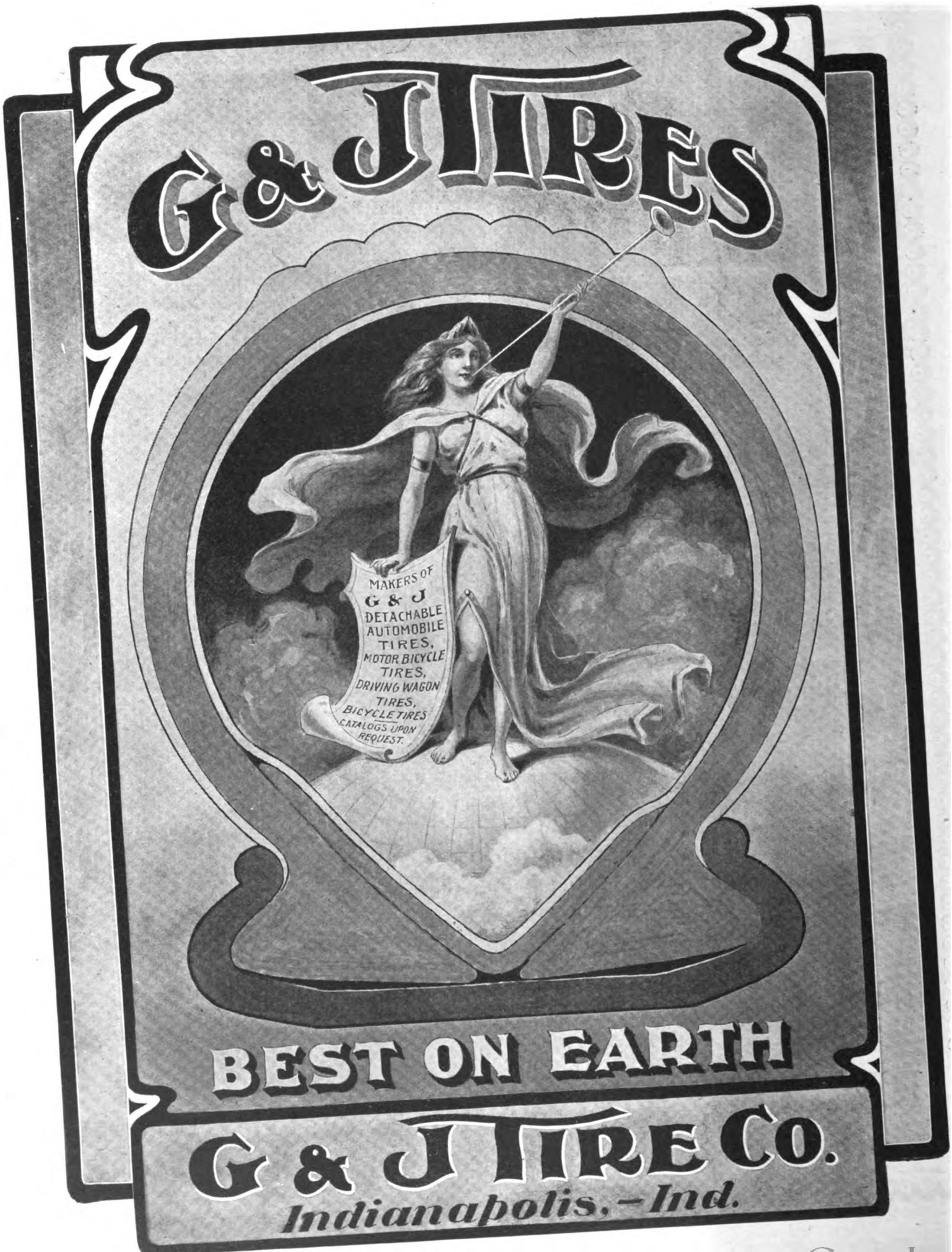
Manganese bronze bevel gear. Fitted for either 1¼, 1⅜ or 1½ inch axles 8 pitch. 60 teeth. For direct drive. Rod transmission.

We are also manufacturers of Tubular Running Gears. Radiating Coils, Aluminum and Brass Hoods, Wood and Wire Wheels, Auto Mufflers and Carburettors.

READING AUTOMOBILE & GEAR CO.

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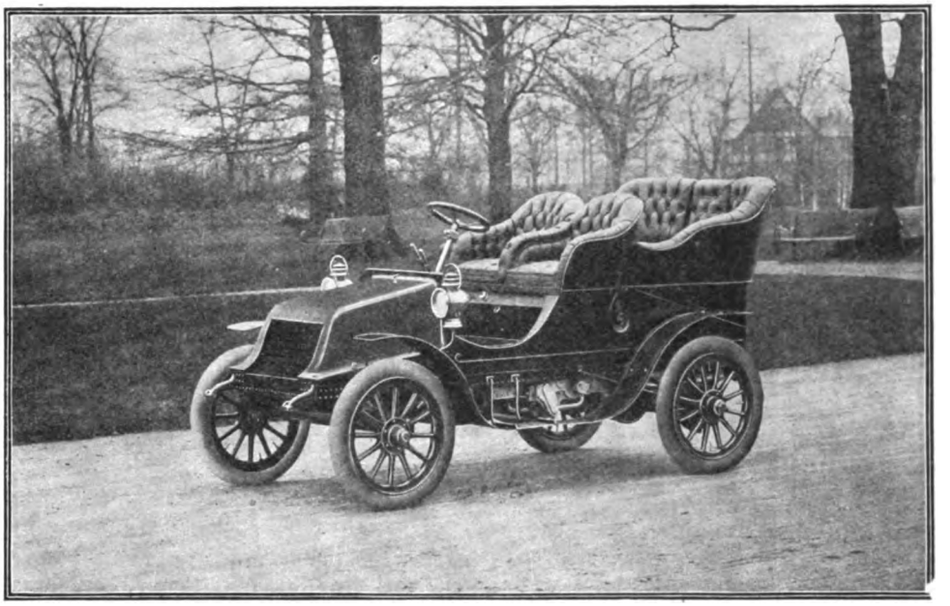
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Our Limit.

ONE thousand WINTON TOURING CARS will be manufactured during the current year. Even with greatly increased facilities and a system for production not excelled by another automobile manufactory in the world, we cannot go beyond the one-thousand mark and incorporate in every car the standard of Winton excellence. With this necessarily limited production we cannot expect to meet demand, hence this early opportunity to caution prospective buyers upon the wisdom of getting "under cover" early with their orders.



WINTON SALES BRANCHES AND AGENCIES ARE IN NEARLY EVERY IMPORTANT CITY IN THE COUNTRY. OUR NEW CATALOG IS SO FRESH FROM THE PRESS THAT THE INK IS SCARCELY DRY. DO YOU WANT A COPY?

The Winton Motor Carriage Co., Cleveland, O.

STUDEBAKER Automobiles

----- ELECTRIC -----



NO EXPERT CHAUFFEUR NEEDED.

CAN BE RUN ANY DAY IN THE YEAR, BY ANY MEMBER OF THE FAMILY.

WIDE TOURING RADIUS. A 1903 electric vehicle with a battery, which is durable and will give a run of 40 miles on one charge.

A SUCCESSFUL HILL-CLIMBER. Our machines will climb grades which are not only steep, but covered with sand and mud.

SMOOTH OPERATION. Controller has four speeds, allowing an unusual smoothness of operation in starting.

RELIABLE BRAKE CONTROL. All machines equipped with two brakes.

STRENGTH OF CONSTRUCTION. Built to be worthy in every point of the Studebaker name and reputation.

Studebaker Electric Automobiles will be exhibited at both the New York and Chicago Automobile Shows, and can be seen at the following repositories of the

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FIRST-CLASS AGENTS DESIRED IN TERRITORY NOT ALREADY COVERED.

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VEEDER ODOMETERS

We shall exhibit at the New York Automobile Show, spaces 13 and 14, and at the Chicago Automobile Show, space 124 our new

VEEDER TACHOMETERS

The TACHOMETER FORM A for use on Automobiles and in Electric Power Stations.
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These instruments mark a distinct advance in the speed indicator line, and we invite the investigation of mechanical engineers, makers of motors and dynamos, users and makers of Automobiles, and mechanical men generally.
Descriptive booklet free upon receipt of application.

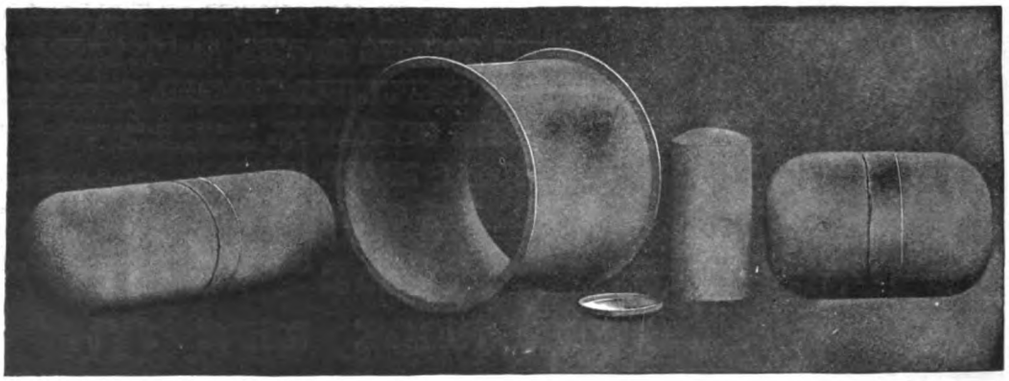
Makers of
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If you are interested in making all Automobiles Safe and Safe Automobiles Safer you must become interested in the

R-C SEAMLESS COPPER TUBES AND SHELLS



FOR BOILERS, MUFFLERS, AIR TANKS, GASOLENE TANKS.

THEIR SUPERIORITY OVER SOLDERED SHEET METAL IS EASILY DEMONSTRATED.

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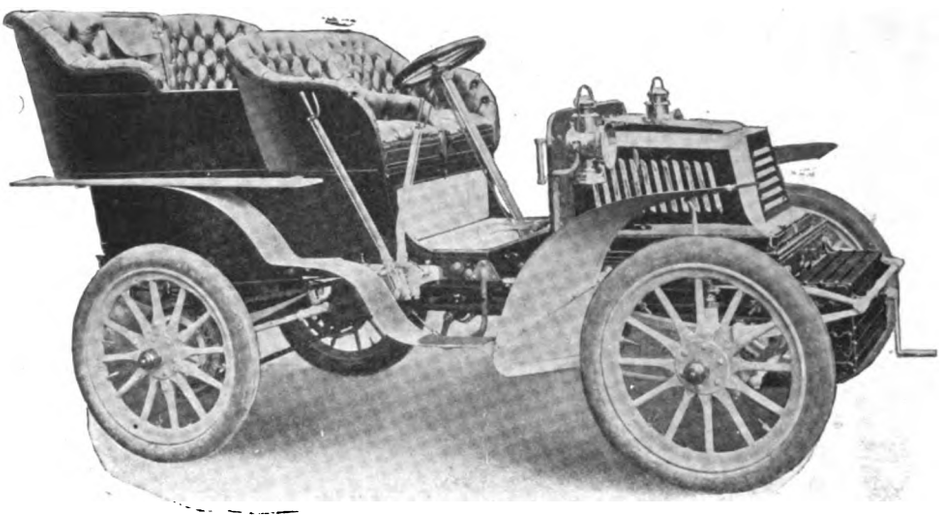
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1903 MODEL, TYPE VII.

"How can you sell such a car for $2,500 when others ask $4,000 to $10,000 for a car so similar to yours?" is a question often asked at our exhibit in the New York Automobile Show. We make them in large quantities and are content with a reasonable profit. Read the description of the various cars at the show, in the trade or daily papers and compare the Searchment with the higher priced ones. Do not pay $4,000 or more for an automobile until you have examined the new Searchmont.

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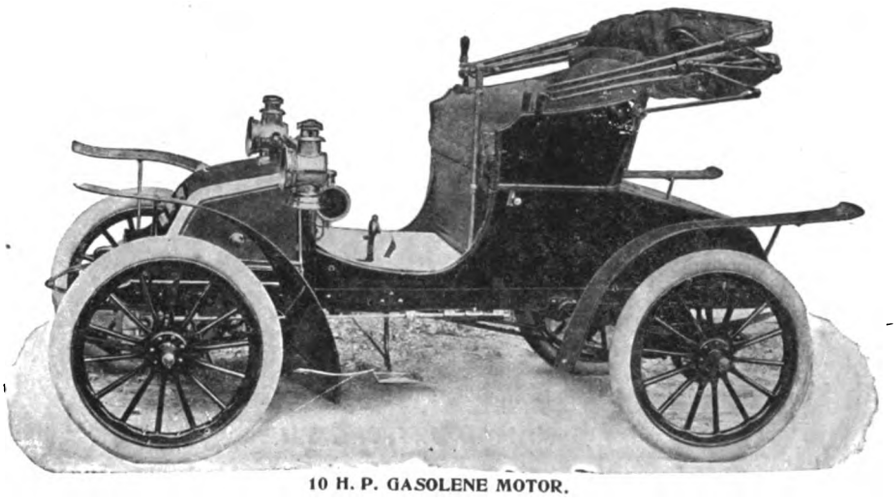
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It's a marvel ! ! !



10 H. P. GASOLENE MOTOR.

We made the Autocar first. The price after.

It is the finest piece of mechanism obtainable at any price; upon investigation you will say THIS IS TRUE. We are the largest makers of light touring cars in this country, and attend to the making only, leaving the sales and agency end of it to the following, to whom you should apply. They will be pleased to send catalogue and information.

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The MOYEA



By long odds the most impressive automobile yet produced in this country.

Designed for those who want the very best. There is not a single detail of the MOYEA that has not been worked out to the finest degree.

Built on the most approved lines and of the very finest materials, it fairly

Bristles with Quality

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SEE IT BEFORE YOU BUY.

MOYEA AUTMOBILE CO.,

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In order to secure either the agency or the possession of the new



CENTURY Gasolene Runabout.

Here's Why. It Lists at $750.00

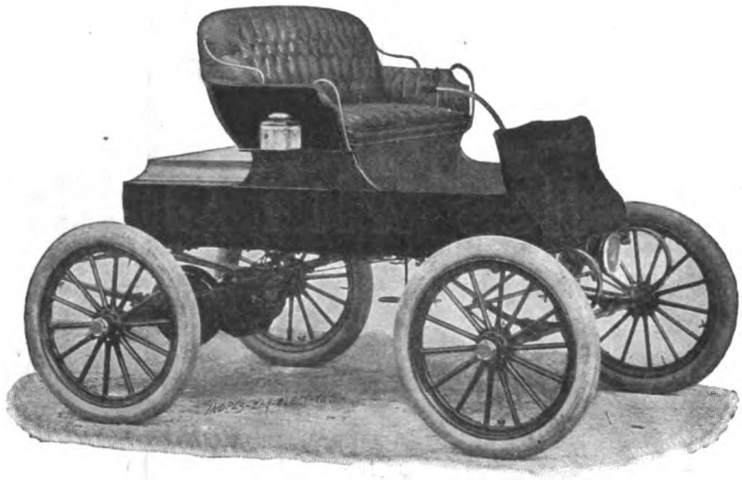
and is the biggest and best $750.00 worth of automobile ever offered.

Contains a motor that develops 7 H. P. (actual) at 700 revolutions. Weighs 1,100 pounds, carries four people anywhere, and is absolutely reliable and high-class in every respect.
Write us—NOW if you're wise.

CENTURY MOTOR VEHICLE COMPANY, Syracuse, N. Y.

A NEW NATIONAL.

Has a record of over 100 miles over level city streets on one charge.



MODEL 100.

10 other Models, all leaders in their class.

RUNABOUTS.
STANHOPES.
PARKTRAPS.

The most powerful Electric Runabout on the Market. The best line for the Agent. Catalogue upon application. Agents wanted in unoccupied territory.

NATIONAL MOTOR VEHICLE CO.,

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See us at Space 124 Madison Square Garden, January 17-24.

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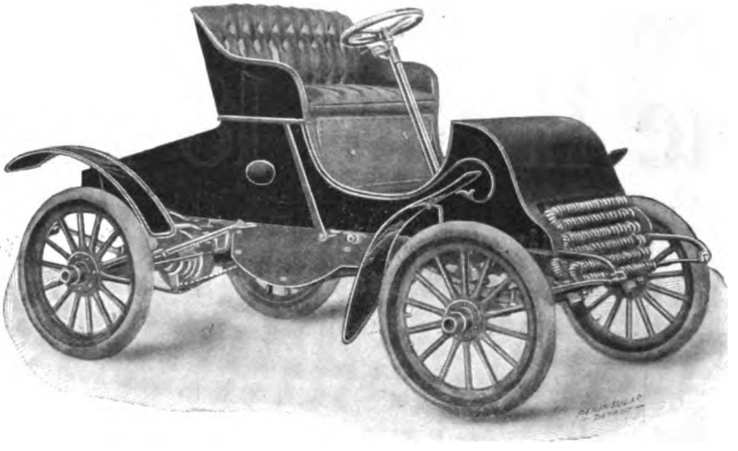
AGENTS BIG AND LITTLE

(THAT IS, WISE ONES)



All have their eyes turned toward

The CADILLAC



$750 (WHEN FITTED WITH TONNEAU $850).

The agency for it makes little agents BIG and big agents BIGGER. You may secure it in your territory, if you are not already too late. BETTER find out right NOW.

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SPACE 9 EXHIBITION HALL

(Agents for PARIS AUTOMOBILE SOCIETE ANONYME, HENRI, FOURNIER, Manager.)

WAS NATURALLY

A CENTRAL POINT OF INTEREST.

The 11 and 18 H. P. MORS

duplicating their success at the Paris Show and clinching their great reputation as the best all-round, high-class French Automobile made. We import

RENAULT, PEUGEOT, MORS, MERCEDES.

ALL KINDS OF FRENCH AUTOMOBILE PARTS AND ACCESSORIES CARRIED IN STOCK.

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Electrics Stored, Charged and Kept in First-Class Condition. Largest and Best Equipped Automobile Repository in the United States.

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BEFORE BUYING EXAMINE THE

WHITE STEAM TOURING CAR

FOR 1903

THE WHITE IS A STEAM CAR WITH THE DISTANCE OF A GASOLENE AND THE EASE OF OPERATION OF AN ELECTRIC.

In the 500 mile Reliability Contest from New York to Boston and return, arranged by the Automobile Club of America, three WHITE STEAM STANHOPES covered the distance without stop or trouble of any kind—a perfect performance.

THE WHITE STEAM GENERATOR

is absolutely non-explosive, gives pressure in five minutes from cold water, and once in motion is self-regulating.

The same motive power which has been so successfully used in former White models will be used in the new touring car.

Write for full particulars, including Professor Thurston's report on our steam generator, and the official reports of important endurance contests.

SPECIFICATIONS

PRICE, . $2,000.00

SEATING CAPACITY,	Four
RATED HORSE POWER,	Ten
ENGINE,	Compound
WHEEL BASE,	6 ft., 8 in.
TREAD,	4 ft., 8 in.
WHEELS,	30 inches
TIRES, (Goodrich Clincher)	4 inches
WEIGHT, (Tanks Filled)	1650 lbs.
EXTREME LENGTH,	10 feet
EXTREME WIDTH,	5 feet
EXTREME HEIGHT,	5 ft., 2 in.
CAPACITY OF GASOLENE TANK,	10 gals.
CAPACITY OF WATER TANK,	15 gals.

EQUIPMENT:

CONDENSER, SIDE LAMPS, HORN,
SET OF TOOLS, TOOL CASE.

WHITE SEWING MACHINE COMPANY

(*AUTOMOBILE DEPT.*)

CLEVELAND. OHIO.

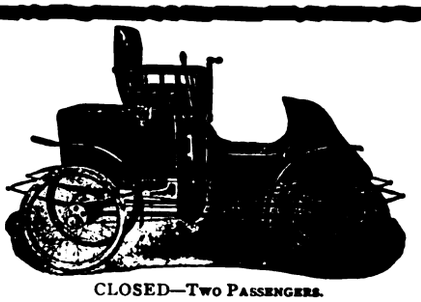
22 Union Square, New York, N. Y.
509 Tremont St, Boston, Mass.
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PEOPLE PREFER THE

PRESCOTT

STEAM CAR

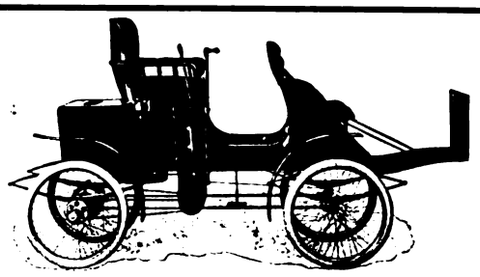


CLOSED—Two Passengers.

IT'S A GOLD MEDAL WINNER.

BECAUSE IT NEVER FAILS ITS OWNER.

NEW YORK AND BOSTON RELIABILITY RUN ONLY ONE ENTERED.



OPEN—Four Passengers.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, January 22, 1903. No. 17

SMITH & MABLEY SUED

Electric Vehicle Co. Institutes Proceedings Alleging Infringement of the Famous Selden and Two Other Patents.

On the eve of show week what is virtually the first gun in gasolene car patent litigation was fired. The concern behind the gun was the Electric Vehicle Co., of Hartford, Conn., and Smith & Mabley, of this city, the well known importers of French and German cars, were selected to receive the charge.

Suit has been brought on two counts. The first suit is that of the Electric Vehicle Co., owners of the well known patents of G. B. Selden on gasolene vehicles, No. 549,160, versus Albert D. P. Smith, et al. The second is brought by the Electric Vehicle Co. and the Morton Trust Co., the latter being assignees of the Maxim patent, No. 699,543, and the Maxim and Pope patent, No. 702,448, versus Albert D. P. Smith and Carlton R. Mabley, trading as Smith & Mabley. The last patents are those covering the steering gear generally known as the "backlock steering mechanism."

The suits acquire their importance from being the first serious attempt outside of the pending suit on the Selden patents to bring to book concerns making or using goods claimed to be an infringement on patented devices. Heretofore patents have cut little figure in the automobile industry, or, at least, the gasolene end of it. The fear of infringement suits has seldom been seriously entertained, and up to this time the feeling of security has been warranted by the practical immunity enjoyed.

Boston's Show in Symphony Hall.

Symphony Hall has been secured by the Boston Automobile Dealers' Association for the holding of its forthcoming show, which will take place during the week of March 16. All but five of the spaces have been sold, and Messrs. Kerrison and Foster are in attendance at the Madison Square Garden this week booking exhibits.

Cudell Enters the American Market.

That old established concern, Cudell & Co., Aix-la-Chapelle, will have its goods handled in this country, arrangements having been made whereby J. C. Brandes will represent them in New York. A garage has been opened at No. 121 West Thirty-first street, and an office at No. 28 West Thirty-third street. The cars are built after the German De Dion-Bouton patents, with a number of the concern's own improvements. There are two models, 16 and 16 horsepower, respectively, both of them being tonneaus, with four speeds and a reverse, with single lever controls. These cars, together with delivery vans of any dimensions and horsepower, can be delivered within three weeks after receipt of order.

In addition, orders for other foreign cars will be taken at prices that are claimed to be 20 per cent under those ruling in this country. The special factory connections possessed by Brandes renders this scaling possible.

Moyea Elects Officers.

On Monday the stockholders of the newly organized Moyea Automobile Co. held a meeting in Madison Square Garden and elected officers as follows: Richard T. Wainwright, president; Sidney Dillon Ripley, vice-president; Henry C. Cryder, secretary, treasurer and general manager; directors, Richard T. Wainwright, Sidney Dillon Ripley, H. C. Cryder, Charles K. Beekman and S. Stanwood Menken. At the time of the meeting it became known that negotiations were pending for the purchase of a factory within the limits of New York City.

Offices of the new Moyea Automobile Co. have been established at 3 to 7 West Twenty-ninth street.

"Fournier" is Dropped.

Henceforth it is the "Searchmont Automobile Co." and the "Searchmont" car, the prefix, "Fournier," being dropped. The change is one in name only and will cause little surprise. The "Fournier" part has been more and more subordinated of late, and its final disappearance was a logical step. Fournier's connection with the company ceased more than a year since.

CHASE SUCCEEDS SCARRITT

Rhode Island Physician the new President of the A. A. A — Racing Rules Revised but Changes are Enfolded in Mystery.

After having run the organization during the first year of its life, the Automobile Club of America has relinquished the executive office of the American Automobile Association to the Rhode Island Automobile Club. President Winthrop E. Scarritt was tendered a renomination, but declined it.

The annual meeting was held on Tuesday afternoon, January 21, in the rooms of the Automobile Club of America. President Scarritt was in the chair, and Secretary S. M. Butler kept the minutes. The meeting was not a very enthusiastic one, although the treasurer, Jefferson Seligman, reported a comfortable balance in the treasury.

The following clubs were present: The Chicago Automobile Club, represented by Frank X. Mudd; the Long Island Automobile Club, represented by A. R. Pardington and Frank G. Webb; the Automobile Club of America, represented by Jefferson Seligman and J. M. Hill; the Rhode Island Automobile Club, represented by Dr. Julian A. Chase and H. H. Rice; the New Jersey Automobile Club, represented by W. J. Stewart; the Grand Rapids Automobile Club, represented by C. B. Judd; the Cleveland Automobile Club, represented by Windsor T. White; the Automobile Club of Philadelphia, represented by H. Bristol Brazier.

The following clubs, not members of the association, were also represented: The Albany Automobile Club, by Dr. Millbank and C. M. Page; the Cincinnati Automobile Club, by Max C. Fleischmann; the Massachusetts Automobile Club, by Dr. W. S. Shrigley; the Berkshire Automobile Club, by S. G. Colt.

The question of deciding as to the competition between amateurs and professionals was referred to the Board of Governors. It was reported that the racing rules had been thoroughly overhauled by the Race

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Committee, and they were submitted for adoption, but before making them public it was deemed best to refer them to the clubs for their approval. The most important of the changes refer to track rules and to the classification of machines.

The Albany Automobile Club and the Cincinnati Automobile Club were elected to membership. The usual yearly reports from the various committees were made. Following is the list of officers elected:

President, Dr. Julian Chase, Rhode Island; first vice-president, Honoré Palmer, of Chicago; second vice-president, E. E. Schryver Reese, Cleveland; third vice-president, Charles F. Judd, Grand Rapids; treasurer, Harlan W. Whipple, Automobile Club of America; governors, Frank G. Webb, Long Island; Dr. Millbank, Albany; William J. Stewart, New Jersey; F. C. Lewin, Philadelphia; M. C. Fleischmann, Cincinnati; A. R. Pardington, Long Island.

197,454 Paid Admissions in Paris.

Paris, Jan. 1.—The close of the automobile show was the occasion of a banquet, at which about three hundred automobilists were present, and which was held in the new theatre attached to the Hotel Pastoret, which is the home of the Automobile Club of France, in the Place de la Concorde. The gathering, which was followed by speechmaking and a theatrical performance, was held on December 27, and was presided over by M. Michel Lagrave.

Monsieur Lagrave is the government commissioner chosen by the French Republic to represent it at the St. Louis Exhibition, and attended the banquet to represent the Minister of Commerce, and brought with him decorations for two well known automobilists, Mr. Max Richard and Mr. Louis Krieger. He also brought a message from M. Emile Loubet, the President of the Republic, to say that in commemoration of the exhibition he had signed a decree to the effect that all those "chauffeurs" who were condemned to suffer imprisonment for contravening the law of the road, should be pardoned unconditionally. Naturally, this announcement raised the enthusiasm of the meeting to its highest pitch, and great cheers were given for the President.

In order to show the increasing vitality and importance of the automobile trade in France, it is only necessary to cite the numbers of paid admissions to the annual show during the last five years. They are as follows:

1898.....	81,400	
1899.....	83,700....	Increase 2,300
1900.....	88,900....	Increase 5,200
1901.....	130,600....	Increase 41,700
1902.....	197,454....	Increase 67,000

This year the Grand Palais was completely packed with visitors each afternoon, and certainly next year, both on account of the visitors and on account of the exhibitors, the building will be too small. Opposite the Grand Palais, on the other side of the Avenue Alexandre III, there is the Petit Palais, and it may be found possible to join the two by a covered way, but this will necessitate stopping the traffic in the avenue during the time the show is open.

RACING—ON PAPER

Fournier and Winton Have Chips on Shoulders and the Cup Candidates Also Cause Comment.

It was natural that racing talk should be rife during the week. It began on Saturday night with the arrival of Alex. Winton, and was continued every day. Much of it was cheap talk, but the "yallers" made the most of it. According to some of the dailies, Winton, Fournier, Oldfield, Mooers and Matheson were as free with challenges and "defis" as pugilists who do not intend to fight.

When Alex. Winton arrived last Saturday he said that he was willing to race Fournier, but would not contest for cash. The stake must be a cup, and the date some time after July 25. As he believes the Cleveland track the fastest in the country, Mr. Winton stipulated also that the race should be on it.

Fast or slow, the track at Cleveland, or rather Glenville, O., would not do for a race, because it would not be in line with the plans of the press agent who first inspired the challenge from Fournier to Winton. Consequently Fournier replied, suggesting a series of three races and naming the Empire track at Yonkers, N. Y., for the first one, the Cleveland track for the second and a neutral course for the third if it proved necessary. Fournier also disclaimed having ever raced for cash (he said nothing about receiving "appearance money), and slyly hinted that Winton having raced against a professional (Oldfield) was not exactly a sainted amateur.

There the matter was allowed to rest for the time being, and the attention of the newspaper men was directed toward getting statements from Henry Ford and L. P. Mooers, both of whom were made to say that he was willing to meet the winner of the Fournier-Winton race.

Repeated efforts were made during the week to learn what the cup race candidates are building in the way of racers, but they were all very careful not to give out any information of consequence. A Motor World man in drifting about learned some things of interest, however. Messrs. Mooers, Harkness and Matheson all were free enough to admit that they would use four-cylinder engines, but would give no idea of their horse power. Mr. Winton will use a horizontal engine, but what its horse power or location in the car will be he did not say.

From whisperings here and there it is believed that Mooers and Matheson will have cars of very big horse power, something probably in the neighborhood of 100. The story about his building a car of 150 horse power was laughed at by Mr. Matheson, and he said that it did not originate with him. He admitted though that his two cars would be of high horse power. Mr. Harkness admitted that his car is being built in New York city after designs of his own. It will not be a replica of any particular make, but will embody all the latest improvements. From what he said he does not favor very high horse power, believing it to be unnecessary. Mr. Winton, the most reticent of all, is understood to agree with Mr. Harkness about high horse power being unnecessary.

One gratifying thing seems certain, which is that none of the cars will be freaks. From what could be gathered the Winton candidate is apt to be the only one with a specially designed racing shape of body. It was rumored that the Winton car would be like the "Bullet," "only more so." The Mooers car will be a true Peerless, and will probably be run simply stripped, and the same was given to be understood with regard to the Harkness and Matheson cars. Mr. Harkness said that his car would be entered in the Paris-Madrid race whether he was selected for the cup race or not, and that a tonneau body would be shipped with the car, and he would prove that his car was not a freak by fitting it to the racing frame and going touring with it after the races.

Mr. Matheson was very enthusiastic and very confident about the success of his car. It would, he said, be very much like the Mercedes, but not exactly. He said that the frame would be the same as that of a touring car only much lower, the flywheel being only four inches from the ground; his car, he added, would be on hand April 11, and that he was willing to enter any contest prescribed by the committee. If he broke down he would not ask for a second trial. If one of his two cars is selected, he will drive it himself, and he, like Harkness, said he would go over and enter in the Paris-Madrid race if not selected for the cup. Messrs. Mooers and Harkness and Winton all declared that they would be ready on the date set by the committee to have the cars in New York, and yet nearly all the candidates expressed doubts of the others being ready on April 11.

Where the Limit is 25 Per Hour.

An extremely liberal speed limit, but rather onerous restrictions in other respects, are contained in an automobile ordinance that has been adopted by the Board of Supervisors of San Joaquin County, Cal.

It limits the rate of speed on the county roads to twenty-five miles an hour, with the provision that when within 500 feet of a horse or other domestic animal attached to a vehicle, the speed must be reduced to four miles an hour, or, at the request or signal of the person in charge of the animal, the machine must be brought to a full stop. A bell, horn or other signal must be used on the automobile, and when the machine is run on the public roads between one hour after sunset and one hour before sunrise one lamp must be displayed in front or one on each side.

For a violation of the ordinance a fine may be imposed not to exceed $100.

Bristol Purchases a Plant.

The recently organized Bristol Motor Car Co., Bristol, Conn., has purchased property formerly occupied by a portion of the plant of the Sessions Clock Co., and will at once commence the erection of a large factory building.

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CANTOR'S QUEER ACTION

Calls an Unexpected Hearing to Advocate new Speed Law, Which, However, Proves Sane.

Borough President Jacob A. Cantor of Manhattan, New York, on last Monday moved upon the camp of the automobilists, cyclists, truck owners, cabmen and others who for nearly a year have been seeking to obtain the passage of an ordinance regulating street traffic that would embody a sensible rule as to the limit of speed in the metropolis, and the result of his move was the complete rout of the organizations that have been working for the passage of the ordinance introduced last May by Alderman Joseph Oatman, which has all along had the support of the A. C. A. and the N. A. A. M. This was accomplished at what looked very much like a "snap" hearing before the Law Committee of the New York Board of Aldermen, called during the week of the Automobile Show, when the automobilists were not likely to attend. Altogether the hearing had a strange and mysterious phase that puzzled those who have been following the traffic ordinance or "rules of the road" proceedings.

The meeting was called by Borough President Cantor ostensibly for a hearing on "the traffic ordinance." The traffic ordinance with which every one has become familiar was not discussed a little bit. This is the one introduced by Alderman Oatman, to which no objection has been made except with regard to the clause concerning the speed limit. Otherwise it was indorsed by all as just the proper article. Instead of this ordinance, or the speed clause in it, which has been the only portion discussed, being taken up, the talk turned entirely upon a brand new set of "rules of the road," drawn by William P. Eno and introduced, presumably as a substitute bill, by President Cantor. Now, the ordinance originally introduced by Alderman Oatman called for a uniform speed limit of ten miles an hour throughout the city, which was sensible and good enough to satisfy the automobilists, drivers and all others, but the Committee of Fifty had hysterics over it and insisted upon the old limit of eight miles an hour, established before automobiles were common in the streets, being retained. As a result a compromise was effected in an amendment, to which the Automobile Club and the Committee of Fifty both agreed, making the speed limit eight miles an hour in the populous parts of the city and fifteen miles an hour in the outlying districts.

The new ordinance, drawn by W. P. Eno, who poses as "simply a public spirited citizen," returns to the original ordinance so far as the speed limit is concerned, calling for a uniform rate of ten miles an hour all over the city. In other respects the ordinance is substantially the same as the Oatman ordinance, but it is more brief and not so explicit and legally well guarded in phrasing, while it is more strict as to the rules with regard to blocking the streets, and more severe in its penalties. It calls for a minimum fine of $1 and a maximum fine of $50 for violation, and this may be imposed upon a truckman who chances to delay a car while unloading his truck during business hours. The maximum penalty in the Oatman ordinance is $10.

The hearing was peculiar in that it brought to the front an entirely new contingent of speakers. The regular advocates and obstructionists of the former bill were missing or strangely silent. The Committee of Fifty and the West End Association, which so bitterly opposed the limit of ten miles an hour heretofore, were absent, and so far as the hearing went it looked like a bill being "railroaded," for no one spoke against it. All present seemed to be friends of President Cantor or Mr. Eno and his bill. As the ordinance is really a sound and sensible one, perhaps this was just as well.

President Cantor started the ball a-rolling by saying that this was a concise and good ordinance that should be passed and enforced, and he recommended that the Board of Aldermen after passing the rules should address the Police Department requesting that trained and efficient policemen should be stationed throughout the city to enforce the rules and prevent the streets from being blocked by careless and obstinate drivers and motormen.

W. W. Niles, counsel for the Automobile Club and the N. A. A. M., said that the automobilists and the Committee of Fifty favored the amendment to the Oatman ordinance which permits of a speed of fifteen miles an hour in the portions of the city not built up. He then left the room. After that half a dozen men and one woman—a Mrs. Ralph Trautman—took turns in extolling the new set of rules and urging their approval by the Law Committee. Alderman Oatman was present, and so was Jefferson Seligman, but the only part they took in the discussion was to explain certain points in relation to the new rules, which were the only ones to which any reference was made.

A representative of the Road Drivers' Association, Railroad Commissioner Cole, Counsellor Root of the Interurban Railroad and Josiah C. Pumpelly, secretary of the City Improvement Society, all new men at these hearings, spoke earnestly in favor of the new rules. Chairman Armitage Mathews and his associates listened stolidly, as usual, and gave no indication of what they would report.

Boston Pioneer Dead.

Boston's pioneer automobile tradesman, P. C. Lewis, of the Automobile Headquarters, 66 Stanhope street, died on Sunday last. Out of respect for his memory, all the automobile stores, garages, etc., in Boston were closed on Tuesday afternoon from 2 to 3 o'clock, when the funeral took place.

GERM ATTACKS GOVERNOR

New Jersey's Varnish-Making Executive Develops Motorphobia and an Onerous Law Follows.

New Jersey's Executive is "agin" the automobile, or at least he strongly urges restrictive measure of a drastic character, one requirement being the passing of a "suitable examination" before being allowed to operate a motor vehicle.

In the annual message of the Governor these passages occur:

"The increasing use of automobiles, and the record of accident and death caused by them, make it important that the legislature should pass a law regulating their use. They are machines which, as every one knows, may go anywhere. If a man is to drive a locomotive engine he must serve years of apprenticeship as a fireman and undergo successfully a rigid examination as to his duties. And the locomotive engine is confined to a carefully built track, from which it is never able to move very far. An automobile, with its power to run wild, is now allowed to be driven by men, women or children, who in the majority of cases have little knowledge of machinery, and when the thing goes wrong, as it frequently and suddenly does, they are helpless.

"A record of the accidents of the last year would be a long and sad one. In the interest of the lives and comfort of the community, I ask the legislature to pass a law that will require a suitable examination to be passed before any one may be allowed to drive an automobile, and that no automobile shall be allowed in this State that is geared to run at a higher speed than fifteen miles an hour. If, because of the construction of certain machines, this is impractical, definite speed regulations in such cases might be defined."

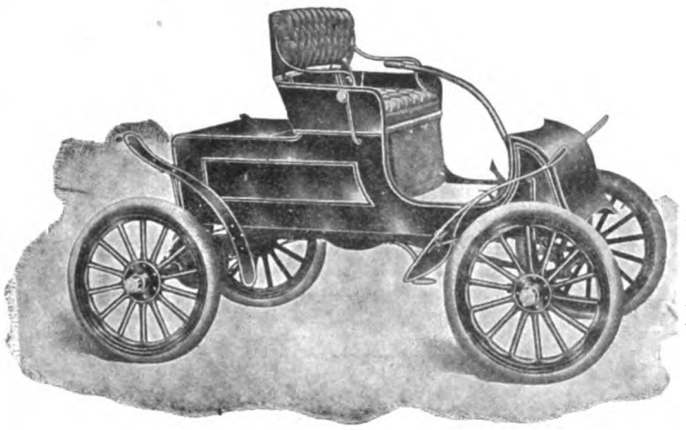
Immediately upon the convening of the New Jersey Legislature at Trenton on Monday Assemblyman Scovel, of Camden, introduced a bill that provides for a Board of Automobile Examiners, the five members to be appointed by the Governor. Under the terms of the bill each person who desires to operate an automobile in the State must go before the board and be examined as to fitness for so doing. The license to be issued will cost $5. The measure seeks to fix the speed limit at fifteen miles an hour and a fine for violation of the law.

Tinkering With Connecticut's Sane Law.

Autophobes are endeavoring to change the present highly satisfactory automobile speed law in Connecticut. In place of the maximum rate of fifteen miles per hour now permitted, a speed of eight miles is proposed. A bill was introduced in the legislature last week by Assemblyman Warren, of Lyme, providing that "automobiles or other horseless vehicles shall not be run over the country roads in this State at a rate of speed in excess of eight miles an hour, under a penalty of a fine of not less than $50 nor more than $100. As the present law is really a model of charity and fairness, its alteration would be a source of regret.

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NEW YORK, JANUARY 22, 1903.

The What's What of the Show.

Eye-opening the present show must be characterized, and as the days pass and the many genuine novelties are more closely examined the wonder grows.

Not even those supposed to be "in the know" were prepared for such a showing of entirely new and advanced types of cars. For once factory secrets were well guarded, and scarcely an inkling of them was permitted to escape. As a result the surprise was all the more complete when the seal of secrecy was at last removed and the cars exposed to public view.

These innovating cars are not confined to one stand, nor to two or three or half a dozen. The show is flooded with them. Instead of being confined to any one power, they embrace all three. They run the gamut from radical reconstructions to comparatively unimportant changes. Taken as a whole, they mark the closing of an epoch and the begining of a new era.

Consequently there is little uncertainty about the present show. The various tendencies and trends are clean cut and unmistakable. One can easily read the immediate future; and while there may be doubt as to ultimate happenings, there is none about present ones.

For the moment gasolene holds the centre of the stage. It dominates the show and even the industry. It is the rage, the fashion, the mode, the craze of the day. To it makers bow down as before a devastating storm. This extraordinary popularity is incontrovertible. But in spite of it electricity has quite held its own, has gained some ground even. Makers of electrics are full of confidence, and their number has been augmented—a sure sign of prosperity.

Tonneau bodied, bonneted, long, low and rakish looking steam cars of the gasolene type have made their appearance. They are received with enthusiasm, and their makers congratulate themselves on their perspicacity in divining the trend and preparing to meet the demand. No doubt is entertained that this will be large.

In the gasolene field a very pronounced tendency is observable. The multiple cylindered, vertical engine, placed front under a bonnet, with transmissions by shaft and bevel gear or individual chains to wheels, tonneau bodies and similar features that have heretofore been found mostly on foreign cars, are, for the first time, in a majority. This is true, even if cognizance is taken only of American cars. With those of foreign manufacture—all of which, of course, are of this type—included, the showing is even more impressive.

Whether right or wrong, permanent or ephemeral, this type of car is the favorite. There is no dodging that fact. Friends and foes alike must recognize and acknowledge it.

The horizontal motor—either single or double—type of car is a good second. The light runabout claims most of the single cylinder engines, and there is a considerable increase in the number of medium powered, medium weighted cars. Many of the latter are fitted with blind hoods, used to stow away tanks and supplies.

It is noteworthy that a decided and altogether unexpected advance has been made in the matter of commercial vehicles and closed cars.

The latter were seen on a little less than a dozen stands. Small as this showing is, however, it is decidedly encouraging. As the Motor World has frequently pointed out, if the automobile is to become an all-the-year-around vehicle, and not merely one usable during pleasant weather, it must be built with inclosed bodies, thus making it an actual competitor of the horsedrawn vehicle. Some of the cars of this class shown merited and elicited much praise.

It is made plain at last that the commercial vehicle is being taken up in earnest. The number of vehicles shown is large, and in nearly every case they are contracted for or sold. Heavy trucks make the best showing, but the light delivery wagons are far from being sidetracked. There is more willingness shown by makers to undertake the construction of vehicles of this class, as well as a gratifying readiness on the part of commercial houses to invest in them, showing a confidence on both sides that is undoubtedly well founded.

No one can turn from a survey of the show without a feeling that it is one that in every way reflects credit on the industry.

The improvement has been general. There are some beautiful specimens of cars building, and while even yet the refining process has not set in to anything like the extent that has marked it abroad, it is easy to see that our makers are on the way.

In fact, the show is quite as important for the promise it holds out as for what has actually been accomplished. A year hence there will be little to excuse and less to be ashamed of, and infinitely more to praise than even now.

Its Influence on the Man.

On more than one occasion stress has been laid on the immense good the automobile will accomplish by bringing home a certain amount of mechanical knowledge to men in the non-mechanical walks of life.

The man who does not know how to wield a screwdriver or wrench, or even to tell the difference between a worm and a spur gear, has no business operating a motor vehicle, and, tried by such a test, the average intelligent American would emerge triumphantly. He "knows his way about," as far as the rudiments of mechanics are concerned, even although he may never have done a stroke of mechanical labor—professionally—in his life.

But much more than a knowledge of the rudiments is required if one is to have much to do with an automobile—whether the relation is to be that of salesman or user. The more knowledge he possesses the better he will get along. A smattering may answer for a while; but sooner or later the consciousness is borne in upon one that at least a half

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way acquaintanceship is necessary if one is to be more than a pawn on the automobile chessboard.

It is because of these facts that we see to-day a determination shown to acquire the requisite knowledge of automobile construction.

Dealers and salesmen, demonstrators and repairmen go to the factories to study the subject at first hand. They want to know, to learn the how and why of things. There are a hundred different points to be settled, all of them interesting, many of them important. To dissect, inquire, probe, to store up facts that will prove useful in the future, to acquire knowledge that will shed light on the mistakes of the past—this is the work they address themselves to, resolutely and with hearty goodwill.

The same thing—only, of course, to a lesser extent—is going on among users of automobiles. They soon learn their shortcomings and to admit the value of overcoming them. Knowledge is power, and in the case of the automobile it is also an insurance against breakdowns—a lightning rod erected to intercept and conduct to a place of safety unwelcome visitations in the shape of choked carburetters, imperfect-working ignition systems, enigmatical engines, etc.

Out of it all will undoubtedly come an immense amount of good.

Cars will work better and give better results in the hands of their operators; simple troubles will be lessened, and when they do develop they will be more quickly traced to their source and put to rights. Cars will not be so subject to ill handling and abuse. The intelligent driver will better appreciate the limitations of the fine piece of mechanism that has been placed in his hands and govern himself accordingly.

End of the Mysterious Era.

In former days State secrets were no more jealously guarded than those of automobile construction. We have only to go back in memory to the time of the first automobile show, held in 1900, to recall what a "holy of holies" cylinder dimensions, transmission gears, carburetters, wheel bases and such like details of construction really were.

There was a general and a very emphatic disposition to keep these fundamental "secrets" locked up in the inmost recesses of the maker's strong boxes. They were his stock in trade, acquired at much cost, after great expenditure of gray matter, and quite invaluable. Should they be disclosed, rival makers would discard their old, obsolete patterns and begin making replicas of the ones just placed within their reach. A close mouth was kept always, and not even customers could prevail on their principals to violate the sanctuary.

Even when the 1901 show took place—a little over a year ago—matters in this respect had not improved very much. There was still profound reticence preserved, the same shocked astonishment expressed at the thought of "giving up" particulars relating to construction.

But what a change has taken place—a change as complete as even the most indefatigable delver into the "innards" of cars could desire.

There are to be seen at the present show working models of almost every part of the motor car. Most of them are put up especially for demonstration purposes—to give away the "secrets" that were at one time guarded so closely. Chassis, engines, transmission gears, carburetters, boilers, ignition devices, systems of control—all are there, in such simple, seeable shape that he who runs may read, and, reading, ponder, digest and understand.

Only in a few cases do "secrets of the designing room" still exist. The steadfast refusal to reveal them has been replaced by a willingness, nay, an anxiety, to spread them broadcast, to dwell upon them, and thus further the cause of educating the great public.

The change is a welcome one, and as sensible as the former attitude was silly. The man who wanted the information for a nefarious purpose could always obtain it in some manner; he had only to take a little trouble and examine a car of the desired make, or, at the most, purchase one and dissect it at his leisure. The honest man, the present or prospective user, the student, the pressman, on the contrary, thus rebuffed, often desisted from the attempt to acquire the desired knowledge.

It is significant that this forsaking of false gods should be contemporaneous with the present epochal development in American automobiles.

It is equivalent to serving notice that the American car, like the American locomotive, machine tool or other production of the metal worker, has no need of concealment, no fear of competition. It stands on its merits and invites, instead of repels, comparisons.

Who will deny that the tide has turned, that the automobile is ceasing to be the object of popular execration? A Connecticut prosecuting attorney has ordered the release of a man who for seven months has been under the stigma of having committed manslaughter, and the Journal and American, of this city—that forefront of offending, that yellowist of yellow journals—turns a somersault and indulges in the most pyrotechnic of eulogies anent the motor vehicle! Plainly, there is hope of rational consideration of this most wonderful and civilizing of vehicles. It will soon become possible to be an automobilist and yet remain a law abiding citizen.

As yet shows in this country lack some of the spectacular features that mark them abroad. The eclat of the opening—with the President of the republic as sponsor—the brilliancy of the scene, the throng of distinguished and fashionable spectators, the elaborate, costly and magnificent stand decorations—these concomitants of the Paris functions are not to be found here just yet.

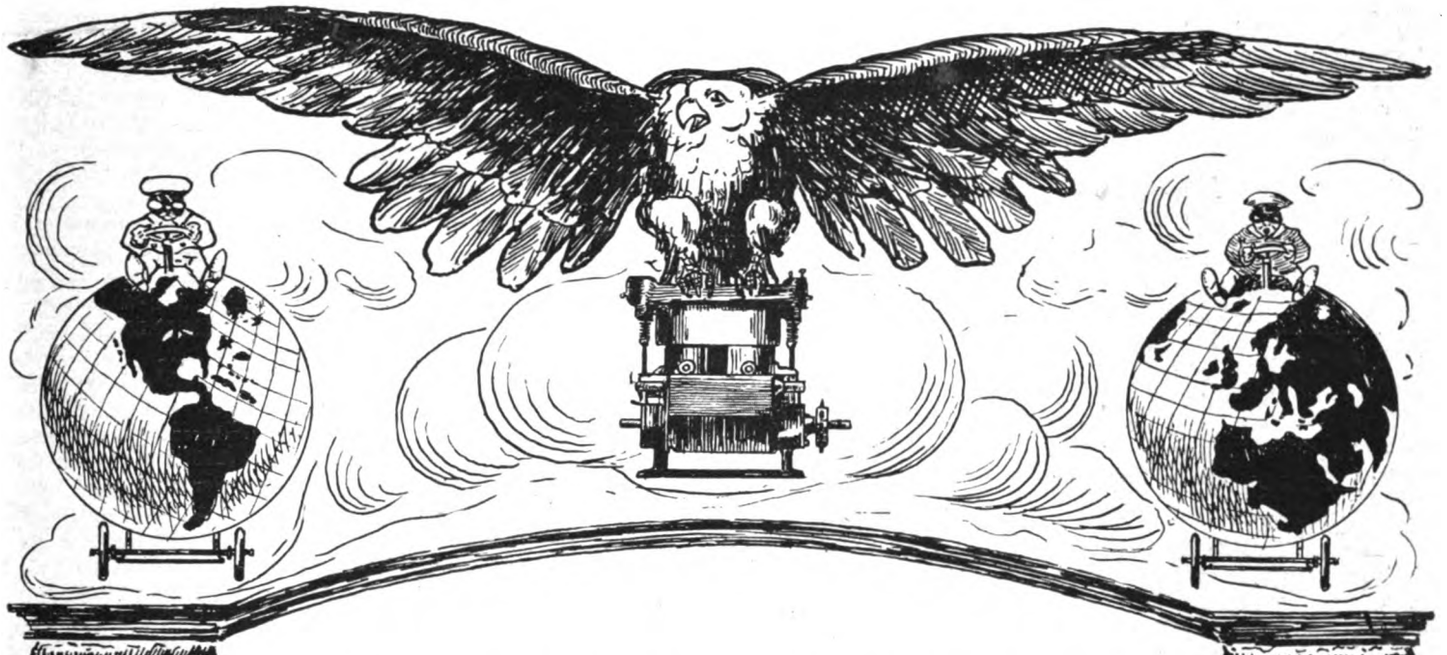
But if the premier American exhibit loses some of its lustre by comparison with its Paris sister, it is still a solid, substantial and almost wholly satisfying show. Its success cannot be gainsaid. This is true whether it be gauged by the standard of dollars and cents—as exemplified in the sales made—or that of its educational value. Both are of a pronounced order.

If the autoist who knows pretty well what sort of a car he wants comes away from the show without having made up his mind—as sometimes happens—what chance is there for his fellow who goes to the annual exhibition to have his doubts resolved? Each car examined leaves him more in doubt. It is an invaluable salesman, then, who is able to convince him that his car is the best and clinch the sale on the spot.

An eight cylinder motor was on exhibition at the Paris show, and from more than one quarter we are promised cars rated at between 100 and 150 horse power for the 1903 races. But we cannot help asking ourselves whether the mark has not been overshot. These figures do savor of the impracticable.

We no sooner reach the stage of finality, the period when further improvement is impossible, than lo! the air is full of changes, of improvements of all kinds, and makers fall all over each other to get in line.

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SHOW PROVES A REVELATION

Surprises of all Sorts Develop Showing Even Greater Progress Than had Been Foreshadowed—Nearly a Score of Unexpected Models Make Their Appearance—Touring Cars Rampant, and Closed Cars and Commercial Vehicles Conspicuous—Many new Mechanical Features Also Uncovered—What They are and Where They are to be Found.

Eye-opening is the term which best describes the New York Automobile Show of 1903.

Neither the President of the republic nor the Mayor of the city was present to inaugurate the function by strewing flowers of speech on the industry; but neither the show nor the industry felt the lack. The doors of Madison Square Garden opened without blare of any kind on Saturday evening last, and the crowd flocked in, and, excepting Sunday, of course, have continued to flock each afternoon and evening since. It is a well bred, well dressed, well groomed crowd—probably the most select of the many that attend the succession of public functions held in the Garden, not even excepting the Horse Show. While the latter is a thumb-marked "society" event, "society" is on show in the boxes and the rabble is attracted to view the buds, blossoms and fading lilies of the upper strata. "Society" is almost as numerously in evidence at the Automobile Show, but she is neither on parade nor is she a boxed or advertised adjunct; and automobiles, themselves having small attraction for the "vulgar thorng," the "vulgar throng" is conspicuously absent; the result is probably the best average crowd that the Garden lights ever illuminated. The show itself is far better ordered than its two predecessors. There is an agreeable diminution of the promiscuous horn-tooting and gong-clanging that marked the previous affairs.

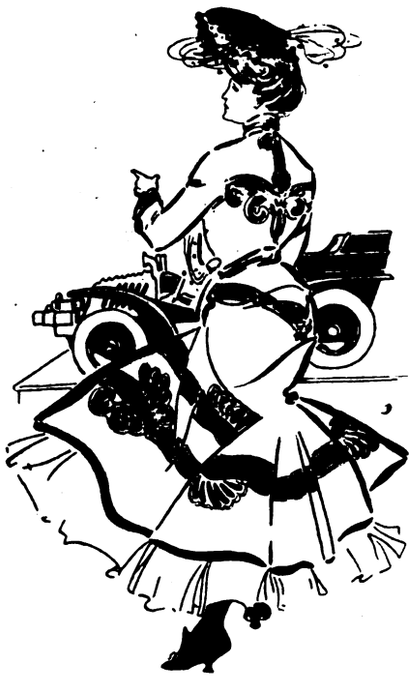
It is not the character of the attendance, however, that caused the opening of eyes, nor is it the eyes of the casual visitor that have been opened. It is the trade's own lids—the lids of those who presupposed that they were familiar with the productions of the industry and with what the show would hold that were lifted. Before the opening some of these had canvassed the intending exhibitors, but, shrewd fellows, not all of these exhibitors told all they knew or detailed all that they would display.

As a result the show has proved rich in surprises, and surprises of the sort that delight the hearts of those who believed they had seen the direction in which the industry should trend, and in which, though appar-

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ently plainly indicated, the trade seemed unduly slow to turn, i. e., toward those classes of vehicles that would make of the automobile more than a fair-weather conveyance of pleasure and persons.

The showing of closed cars and commer-



AN "AUTOMOBILE GIRL"—PERHAPS.

cial trucks and wagons is such as to indicate quite clearly that the trade is now inclining seriously in those directions. Until the present exhibition practically only the makers of electrics had devoted themselves to vehicles of the kind, and, though they are still in the vanguard, both steam and gasolene must henceforth be included in the reckoning.

The Locomobile limousine, the Olds coupé and the Berg coupé are genuine surprises in the matter of gasolene vehicles; the same is true of the Mobile coupé as regards steam. These, with the electric coupés and hansoms, to say nothing of the Locomobile, Long Distance, Pope-Robinson and other big touring cars equipped with tops and glass fronts, make a brave array of closed and semi-closed vehicles that point the way to the general all-year-'round use of the self-propelled conveyance.

In commercial vehicles the Columbia truck and the splendid diversity of the Vehicle Equipment Co.'s heavy trucks and wagons show that electrics point the way, but the White, Mobile and Locomobile delivery wagons—not the light, toylike creations of previous years, but big, substantial counterparts of the horse-drawn deliveries—are steam developments that are not to be minimized, while the Long Distance wagon, though smaller, and the Union truck are evidences that at last there is more than one American maker of gasolene vehicles bent on tilling the field which has been so often pointed to as the one promising the richest reapings of the future.

Of course, the great predominance of runabouts and touring cars dwarf everything else, and perforce the closed car and commercial vehicle are not of prime public interest, but to people who are not given to bird's eye views or to casual consideration these features are full of meaning. They make for general utility and for a stability of the industry that cannot be effected by the whims of fashionables or would-be fashionables.

In the field of pleasure vehicles the tonneau touring car is rampant. They are of all sizes, all powers, all prices—large, small and medium, gasolene, steam and electric. The maker who has not an out and out touring car or who has not a tonneau attachable to his runabout is the exception, and a rapidly lessening one, and all are inclining to the touring car as a distinct model with sufficient power for the added load. The term "touring car" in itself conveys pleasurable suggestions of agreeable companionship and extended jaunts, and its increased and increasing popularity is not surprising. The

Statistics of the Show.

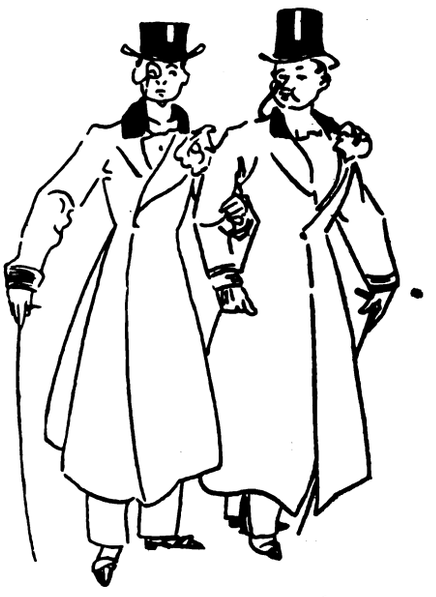
COMPLETE VEHICLES SHOWN, 253.

Gasolene	168	
Electric	51	
Steam	34	
		253
Delivery wagons	8	
Bicycles	8	
Trucks	6	
Child's automobile	1	
Quadricycle	1	
Ambulance	1	
Other vehicles	228	
		253

big, richly upholstered, tonneau bodied Columbias, Wintons, Yales, Stearnses, Packards, Searchmonts, Bergs, Autocars, Pan-Americans and Moyeas, to mention but a few, seem the pinnacle of inviting luxuriousness in road cars. They are high powered and high priced, and are fit to compete with any car turned out in any country; in fact, it is to be remarked that, whereas at the previous show the foreign built Panhard, to cite an instance, was the pivot on which eyes and tongues turned, it is this year but one of the many and no more talked about or sought after than the American cars of its class. The development of the steam touring car also was more marked than had been anticipated. The White and the Grout had been forepictured, but the Toledo and the Meteor were absolutely unheralded, nor was it known that the Locomobile had one in preparation until the photograph was displayed. Of the medium sized, medium priced touring cars the Conrad, the Thomas, the Olds and the Elmore are good examples, and, being within the means not only of the very rich, but of the well do do, will doubtless endure and be not of restricted sale. Certainly touring cars of this type leave no field for the stiff backed and homely surrey.

The runabout also has undergone something of a transformation. It no longer is merely a box or buggy on wheels, nor is it as lightly built or as toylike in appearance. It has developed features of its own, what might be termed the "nose" being the most distinguishing feature. It is more than a dash, it is less than a bonnet, and "nose" is not a half-bad term, the shapes differing almost as variously as the human probiscis, although in one case, the Conrad, the frame and body is projected sufficiently far forward to permit the use of a full fledged square bonnet.

Delving deeper than mere shapes or appearances, the show proves how advantageous is the annual gathering under one roof of all vehicles, to a new industry at least. No man who has engaged in such delving but that will leave New York or remain in New York with a higher regard and greater respect for the automobile industry of America. Heretofore he has had it so dinned in his ears that the home product was five years or so behind the foreign article that he has either half or wholly believed it. Because of the fact he has been more intent on awaiting and examining and remarking and exploiting the features of the European cars. It is not to be denied and no attempt is made to deny that the American trade has assimilated foreign ideas. The tonneau body, the vertical motor, bonnet front, direct drive and other things came from abroad, and are freely acknowledged. But only a month ago word came that mechanical valves constituted a sensation of the Paris show and straightway the comment again went the rounds respecting the backwardness of American manufacturers. But, bless you, here is this show in Madison Square Garden proving that the Oldsmobile, the Rambler and other cars have been using those very valves for more than a year, and no great furore was made about it. The same reports from



"REAL THINGS."

Paris said that square bonnets, compensating carburetters and honeycomb radiators were developments. But there are square bonnets, compensating carburetters and honeycomb radiators on several of the American cars in the Garden, and they were in ex-

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istence long before the Paris show opened its doors. The cables told us also that a combined gasolene and electric car was another Paris sensation. There is one in the Garden and it has been on the roads hereabouts for six months or more. It is probable that if a French maker or a German maker had had half the success the Elmore people have had with their two-cycle motor another cabled sensation would have resulted and Americans generally be discussing or developing two cycle motors.

The American manufacturer is not five years nor five months nor one month behind his European rival. In the Mors, the Peugeot, the Renault, the Darracq, the Fiat, Europe has some of its most admirable productions side by side with those of America, and few there are who will maintain that the latter suffers by comparison, indeed, it is safe to say that in the means and methods of throttling and control, and in the elimination of the bothersome starting crank, in readiness of access to valves and spark plugs and other ignition apparata as exemplified in the Columbia, the Toledo, the Pan-American, and the Locomobile, are developments that Europe may well turn to its profit as some of its ideas have here been advantageously adopted or adapted.

Dating from this year's show the American industry will "feel its oats" and cease to consider itself second to any.

That the decision is justified nearly all who digest the volume of description which is spread on the pages which follow must agree. The Motor World has delved deep and thoroughly and has not sought to deal in platitudes or generalities, or to summarize or gloss over the wealth of development and progress that is contained within the show. It has dealt with the subject exhaustively and those who are seeking light and who would learn what a splendid and inspiring revelation the show really is will discover it in these pages. The revelations relate not merely to the dominant gasolene power, for it will be found that the White, with its new compound engine, and the Mobile, Grout and Prescott contribute in varying degree to the improvement of the steam vehicle, while all of those makers who deal with electrics have, without exception, made substantial developments. The famed Gee-Whizzard of Menlo Park, and his unripe and newspaper exploited battery has been having a bad time endeavoring unavailingly to "make good" and which, were the Edison reputation less glowing and reporters less guillible, would long since have ceased to be heard of.

It is not alone in vehicles, that newness and ingenuity are to be found. In the tires and accessories and sundries much is to be learned or seen that was not known before. The Diamond Rubber Company's non-blooming inner tube is one important "find"; the G. & J. tire with smooth tread, that is, minus its long familiar corrugations, is another, less important, but still of interest. The Goodson igniter and A. H. Funke's pointless spark plug and his interchangeable candle and carbide lamp are but instances of the novelties that the show has brought into the full light; they are but a few of the many that are dealt with in detail in their respective departments of the succeeding pages. To recount them here would be tautology.

As a spectacle the show is brilliant, but not impressive. The roof of the Garden is half hid by alternate loopings of white and lemon-hued bunting and the same color scheme aided by festoons of the national flag and national color; also the French colors (sub-rosa, most of the decorations was left over from the so-called French ball of the week before), is carried into the basement, styled the "Exhibition Hall" by the management, nicknamed the "sewer" by some of those whse exhibits are "down below." But few of the exhibitors have indulged in such ornate and artistic signs and railings and elaborate decoration as photographs show and visitors have said marked the Paris show. And incidentally, M. M. Clement, Charley Fournier and several of his colleagues from across the pond are much in evidence. Fournier, with a moustache having upward tendencies which indicate that it is not alone French cars that bear evidence of Germanization.

Of the exhibits, that of the Mobile Company of America, is the most striking. Columns of white and gold surmounted by milk-white globes surround the space and distinguish it from all others. Baker, Winton, the International Motor Car Company, and a few others spell their names in electric lights, and also with others employ potted plants to set off their exhibits, but otherwise all is commonplace. This applies to the main hall. In the basement, the Central Automobile Exchange makes a brave effort with festoons of evergreen, but here, as in the crowded restaurant, the ceilings are too low to make decoration effective or worth while.

There is a praiseworthy effort to enlighten the public and make plain "just how it works." The chassis is numerously in evidence that all may see the location and disposition of the various fundamentals, while magnetos and spark plugs and Splitdorf's big coil are shown sparking. The ban on gasolene forbids the operation of motors indoors, but by employing dynamos the Whitney Chain Company, shows a series of their chains, each of different size, in motion. C. E. Miller shows the operation of a water pump, and the Veeder Mfg Co. exhibit the operation of not only their odometer, but of the tachometer or speed indicator.

Outside the Garden, many of the exhibitors keep each a car or cars for practical demonstration, and despite the agreement to the contrary "free rides" are the rule.

The attendance, too, is a record breaker. Up to Wednesday night, according to Secretary Young, of the Garden Company, the paid admissions were three times greater than for the corresponding period of last year, while the sale of "trade tickets" then totalled 8,600, as against but 1,900 during the entire show of 1902.

Gasolene

Bristling with genuine novelties as the show is, it is the gasolene car section in particular that is filled to repletion with them. They demonstrated impressively the great advance that has taken place, and more than hint of the mighty strides that will be made by the time another year rolls around.

Little more than a year ago a distinguished French autoist, thoroughly versed in the best foreign constructional practice, who visited this country, remarked in a disparaging if not contemptuous way that American automobiles were five years behind those of Continental origin. Since then no inconsiderable number of other and almost equally distinguished foreigners have visited this country and examined the product of our factories. Without exception they have echoed the opinion quoted, and thought, and sometimes expressed, similarly uncomplimentary things. Not until American makers forsake their idols and adopt the practices in vogue abroad will they progress, they said in effect.

Judged by this standard—which is, of course, an arbitrary one, made to fit a condition that exists chiefly in France—the American motor vehicle has at last been emancipated, and to-day there are American cars that are worthy to be placed alongside the best product of foreign factories and compared, point by point, with them, without the slightest fear of suffering by comparison.

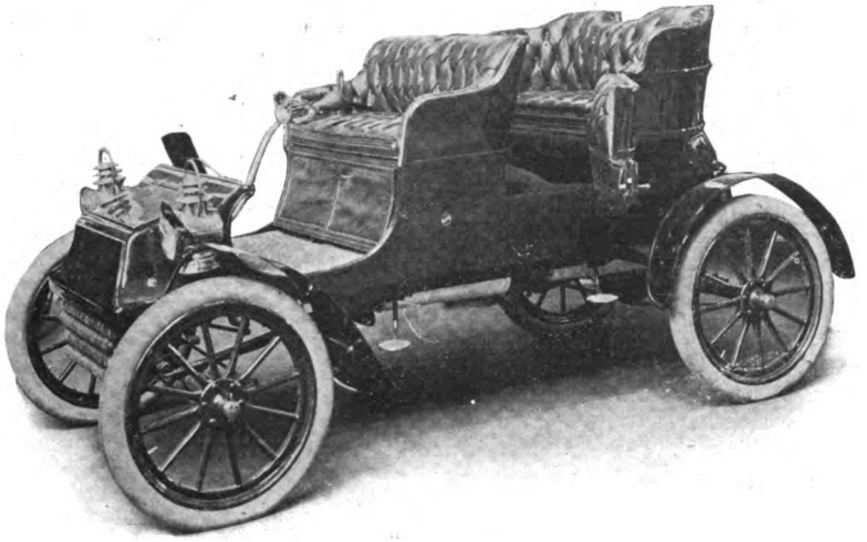
All of which may be much more tersely expressed by saying that many American designers have taken by the bull by the horns, produced cars of the extreme foreign type and improved upon them.

Such cars have undergone Americanization. The influence of the Gaul and the Teuton is there, but underlying it, and at times pressing it hard, is American ingenuity and the disinclination to call a halt before the goal is reached. Consequently Americanisms abound. The innovator has been busy, and some of his work is of an eye-opening character, calculated to start an

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American movement to take its place with the German one that is so much in evidence just now.

It is undeniable that in the battle between the types the so-called foreign car is very much in evidence—perhaps too much so. It



OLDS TOURING CAR.

is as if the American makers had, after being for years taunted by Frenchmen with being unable to produce the French type of car, at last turned to and beat them at their own game, had out-Heroded Herod and "gone them one better."

The result is a number of cars that are real road locomotives—big, powerful, speedy, heavy and costly. The best foreign cars—Mercedes, Mors, Panhard, etc.—have been taken as models and closely followed; but instead of stopping short there the designers have gone on and incorporated feature after feature having as their object greater convenience, accessibility or utility. In short, American mechanical ingenuity seems to have been given full swing, and the result is both remarkable and gratifying. These cars for the moment overshadow all others. They rivet attention, are examined closely and discussed freely. For the time being they dwarf everything else.

In view of all this one almost loses sight of the fact that as far as the American cars at the show are concerned they are almost equally divided between the vertical and the horizontal cylinder types. At the same time the single cylinder is in a hopeless minority, as is the centrally or rearwardly positioned motor to a somewhat less extent.

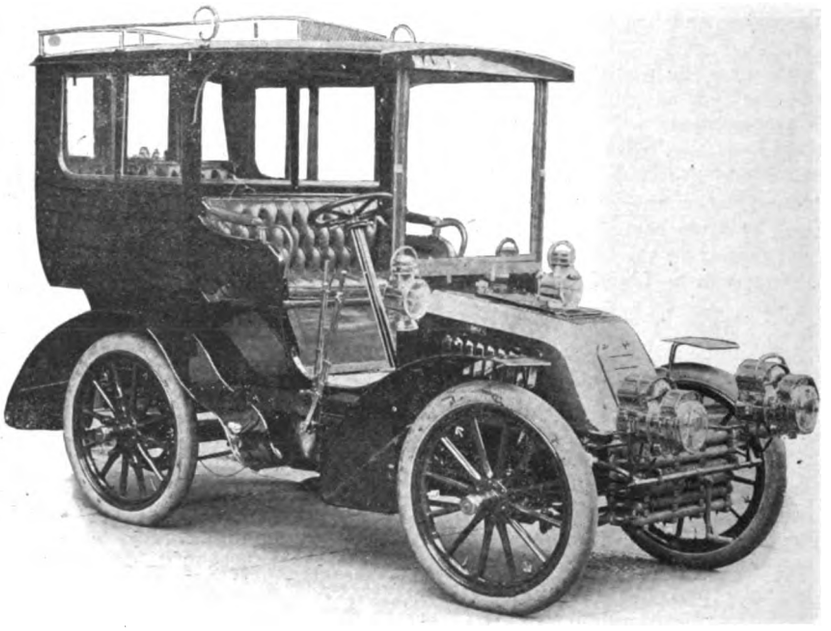
Only the light cars—the runabouts—are now equipped with single cylinder motors, the Olds, the Rambler, the Cadillac, etc. Others of greater weight, such as the Haynes-Apperson, the Autocar, the Elmore, the Century, the F. B. Stearns, employ the double cylinder horizontal type of motor. These cars really form the mainstay of the opposition to the vertical cylinder motor, and demonstrate convincingly that power and speed, as well as reliability, can be obtained without having recourse to the vertical motor.

The mechanically operated intake valve is seen on two widely differing classes of cars. One, of which the Olds is the most conspicuous opponent, always has used this method of opening the valve. The Olds half-time shaft has cast on it two cams, one working the exhaust and the other the inlet valve. The Rambler and several other light cars use systems very similar. The other cars referred to are the latest, most advanced type, such as the Pan-American, the Electric Vehicle car, etc., and they use the same method as the Mercedes car of a year ago and the leading French cars seen at the Paris show.

That other Mercedes innovation, the direct drive on the high gear, is also employed quite numerously. The same is true of the honeycomb radiator in some of its many forms, throttling the mixture at the intake valve—exhaust throttling being quite out of favor—carburetters with variable air supply, the use of hot water pressure on the lubricating oil tank or of oil heating devices, such as placing the tank near the motor or exhaust; the absence of secondary frames, the use of longer wheel bases, etc. In short, there are but few of the much heralded novelties of the Paris show that are not found on one or more of the cars on exhibition at Madison Square Garden. Steel cylinders are almost the only exception, while on the other had there are a number of features here that are certain to be copied and find their way into accepted practice.

Chief among the features which distinguish the most advanced American practice from that of European builders are the greater flexibility of governing the greater accessibility of motor control, and the greater interchangeability of parts of the former.

Until recently foreign gasolene cars have been hand governed, either by the spark lead or the use of the throttle. The Panhard people first made use of an automatic governor, and were followed by Mors and other makers. At the present time the use of governors is general, abroad as well as here. But American builders make a much more extensive use of hand appliances, either to retard or accellerate speed, changing the action of the governors or suspending their operation entirely. Hence, they have a better command of the engine without having to resort to such frequent use of the speed changing gears. At the show under notice, conspicuous examples of this tendency are the Packard, the Berg, the Locomobile, Columbia, Pope-Robinson and Pan-American cars.



LOCOMOBILE LIMOUSINE.

In accessibility of engine parts the Columbia touring car is the striking example, its detachable valves and plugs being unique.

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But several other concerns have given the matter thought, and the result is seen on a number of stands.

Interchangeability is the great characteristic of American machine practice. Consequently, its influence is seen at Madison Square Garden. If an American maker makes a split or three part shaft he designs it so that either end will be the left hand one; that is, both ends are alike. The same distinction to make two or more different pieces where one will do for all, is seen. This simplifies replacements, of course.



UNITED STATES LONG DISTANCE CAR.

The high speed engine still exists, but it is the low speed one that is found on a vast majority of the stands. It is probable that 600 revolutions per minute is rather above than below the average. In the case of the Winton, for example, the mean speed is less than 400 revolutions.

Owing, perhaps, to the number of powerful and speedy cars shown, the sliding gear type of transmission is seen to have gained ground at the expense of the individual clutch. It is not always accompanied with chain drive to the rear wheels. In several instances, the new Packard being a notable example, shaft and bevel gears to a live rear axle take the place of chains. This, of course, raises the old controversy of chain versus bevel gear drive, and it is just as impossible of settlement as it ever was.

The sun and planet type of gearing, being confined chiefly to the light and medium weight cars, has quite held its own. Its comparative simplicity and suitability for cars not requiring a large number of speeds insures such a result.

Reaches and tubular frames have undergone a great dimunition. The steel channel or I rectangular frame, sometimes reinforced with wood, is very popular. It is frequently narrowed at the forward end, so as to permit the front wheels to turn at a sharper angle.

Unrest and even uncertainty seems to prevail in the matter of ignition systems. Dry batteries, accumulators, magnetos, dynamos —all are in evidence—and none of them appear to be losing ground. Gains made in some quarters have been offset by losses met with in others. A maker who formerly used a magneto or a dynamo is found to have returned to batteries; while another exactly reverses this procedure.

The runabouts and medium weight vehicles undergo little change in price. But the big ones more than even matters up, for they have been placed high. The $7,500 Packard, the $6,000 Locomobile and the $5,000 Columbia cars are striking examples of this tendency. With them weights have also risen. The big cars run from 2,000 to 3,000 pounds, with the moderate priced cars 1,000 less and the runabouts going down to 500. It is noticeable, too, that the tendency is to get the centre of gravity down low, so as to insure stability.

The artillery wheel has made immense strides; other types are merely "scattering." The roller bearing, too, has gained ground. The detachable tire has the field pretty much to itself, the single tube variety having taken a seat very far back. Equal sized wheels and large tires are almost universal. The tonneau body is extremely popular. It marks the touring car, which is really the feature of the show. Makers may disagree about motor positions and types, but they are as one when it comes to the matter of touring cars. All admit the demand for them, and the addition of a little power and the substitution of a tonneau for a two-seated body is frequently all that is necessary to effect the change from runabout or phaeton to touring car. If touring is not pursued with avidity this year it will be cause for surprise.

Three cars of one general type—long based, bonneted, with wheel steering, artillery wheels, etc. And the bodies are usually comfortable and roomy, sometimes triumphs of luxuriousness.

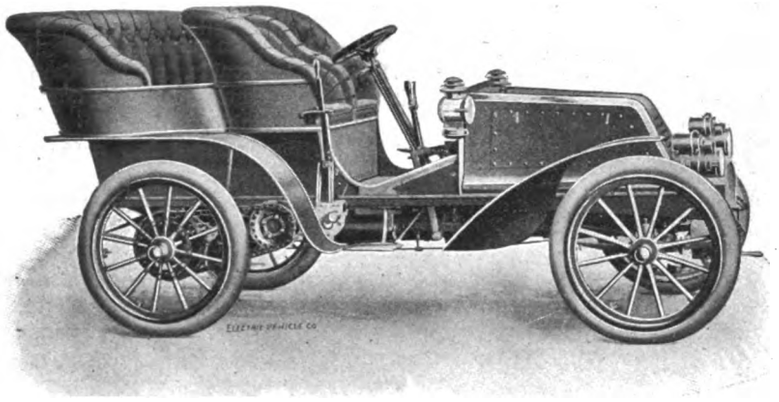


OLDS COUPE.

In covered gasolene cars the collection is really an impressive one. The Olds physician's car, the Locomobile limousine and

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the Berg closed tonneau were all unheralded and genuinely novel. The cars with glass fronts and canopy tops—the Pope-Robinson, the Locomobile, the Long Distance, etc.—also show an appreciation of the demand for all weather cars. All these are of home manu-

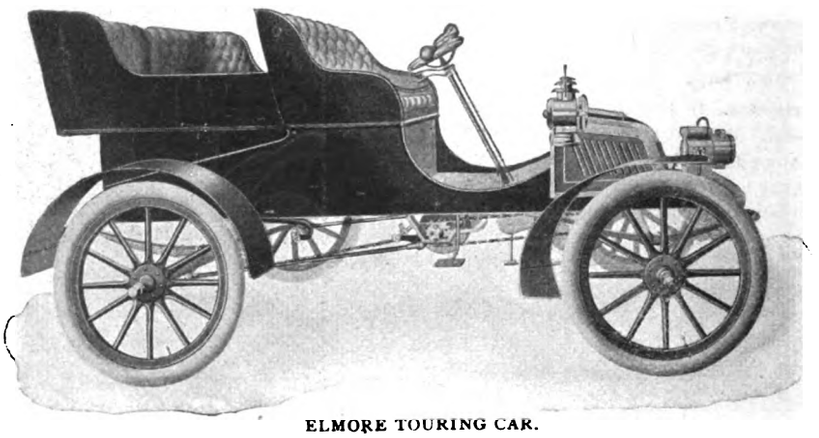


COLUMBIA TOURING CAR.

facture, the foreign cars—De Dion, Darracq, Central Automobile Co., etc.—bringing the total of closed gasolene cars up to 15.

Electric Vehicle Co., Hartford—While the Columbia electric vehicles obtained well merited attention, the gasolene touring car shown for the first time is an important contribution and development. This car exemplifies what long continued and careful study of the engineer, Mr. Fred A. Law, and the unlimited resources of the company, can do toward producing for the American market a machine ready to compete both in appearance and general usefulness with the high grade foreign built machines. It is in truth, a "car," and while conforming in general appearance and design to the style of the foreign cars, it has many features of improvement exclusively its own that well deserve the attention of those who are prone to rush abroad for their ideas.

From an æsthetic point, it is a handsome creation. It is long on its wheel base, which is 93 inches, with a 56-inch tread, and is provided with a "King of Belgium body" made in two pieces, the tonneau section being readily removable upon loosening four bolts. The wheels are all 34 inches in diameter with 4-inch detachable tires, and are connected to the body on the front axle through half elliptical springs, while full elliptical springs are arranged over the rear axle. These latter are pivoted to the body instead of being secured through a rigid spring clip, and thus give extraordinary ease of action. The engine is of an approved form specially designed, having four cylinders 5 inches in diameter with a 5-inch stroke, giving a rated horsepower of 20 and a 26 brake horsepower. This engine is mounted, or rather suspended, from an angle iron frame thoroughly trussed in such a manner that all lines of strain upon the frame during its flexing action are about the axis of the main engine shaft. Its igniting plugs and valves may be removed by merely turning the key or lever a quarter turn, and in each instance these parts are bodily removable, and may be opened at will and in the shortest possible space of time without even the use of a wrench. The engine is, of course, water cooled, and a cooler of the honeycomb type with a fan driven by the main engine shaft provides ample cooling means for the water, which is under forced circulation induced by a positive gear driven pump. No water tank other than the honeycomb cooler is used. A very novel ignition system is to be seen on this vehicle, and is known as the Eisermann. While this system is comparatively new, and it is believed appears upon this vehicle as the only example in the show, great things are claimed for it. The whole mechanism, including the contact devices for igniting the compressed charges in the several cylinders, is contained in a single structure, and requires the use of but a single spark coil for the four cylinders without necessitating the use of a battery. A battery is provided, however, with a switch conveniently located upon the seat by which the engine may be started by simply throwing a switch and without necessitating the use of a crank. The gauge in the dash shows at an instant's glance whether or not the water about the engine cylinders and heads is circulating properly. A gasolene tank with a capacity for 150 miles is located under the front seat, and all necessary water for a 150-mile run is stored in the cooler. The engine has an automatic throttle governor of the ball type, the governor being arranged at the extreme front of the engine, and this governor will absolutely govern the engine to 500 revolutions a minute. The engine drives through a sliding gear system of transmission, with a direct drive upon the high gear to a countershaft, with individual chain drive to each of the rear wheels. This transmission, giving four speeds forward and one reverse, with a maximum speed of forty-five miles an hour, is controlled by a single lever which passes through a slotted plate, the latter being provided with a lock for preventing unintentional throwing of the lever into the reverse position. A unique feature in connection with the carburetter is an automatically adjusted mixing valve, comprising a counterbalance vein opening directly from the atmosphere, while the main supply of air is taken from a tube located adjacent to the heat engine surfaces. This latter tube has an auxiliary sleeve with perforations, the registering position of which may be varied with relation to the main tube, thus tempering the air passed to the carburetter to any desired degree. The oiling system for the engine is admirable in every detail; strainers are interposed both in the oil circuit and the water circuit, with readily removable traps, which upon being withdrawn take with them any dirt or sediment which may have inadvertently found its way either into the oil or water system. The splash system of lubrication is used in connection with a direct feed, and the engine shaft has upon it rings or plates which, through centrifugal action, co-operate with gutters or drains arranged to catch the drip from the main portion of the cylinder, and insure proper lubrication of the parts, at the same time preventing the passage of oil out through the main bearings. The oil for the main oil system is fed to the engine under pressure, which pressure is induced by a shunt tube connected with the muffler. In addition to the automatic adjusted mixture, there is the hand justifier, the lever for which is mounted upon the steering wheel support, together with a lever for adjusting the ignition and accelerator for varying the action of the throttle governor. Wheel steering is used, with a particularly fine arrangement of tilting steering wheel and inclosed rack and skew gears, the latter inclosed in a single casing and immersed in oil. The main clutch, which is of the flywheel pattern, merits particular attention. The movable member of this clutch has in its outer surface a series of spring pressed blocks, which normally extend above the surface of the clutch member and are the first to come in contact with the rather fast flywheel. This clutch is certainly unique, and by its construction it is claimed to be possible to throw it in without a particle of shock being trasmitted to the vehicle. On the other hand, by easing the clutch off it may be slipped without danger of burning parts. Two sets of very powerful brakes

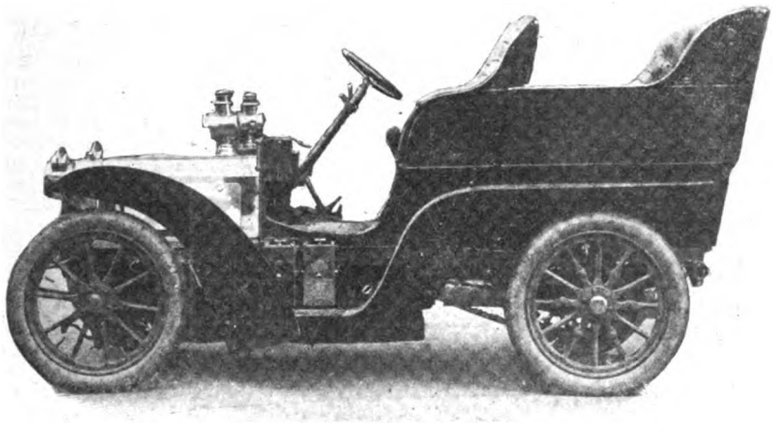


ELMORE TOURING CAR.

are provided, one set upon drums arranged upon the rear wheel sprockets and the other arranged upon drums adjacent to the sprockets of the countershaft. The clutch pedal is interconnected with the regular brakes of the countershaft, so as to insure a release of the clutch upon an operation of the brakes. The emergency brakes are controlled by a lever, which automatically locks as it is pushed forward and is arranged just at one side of the steering post.

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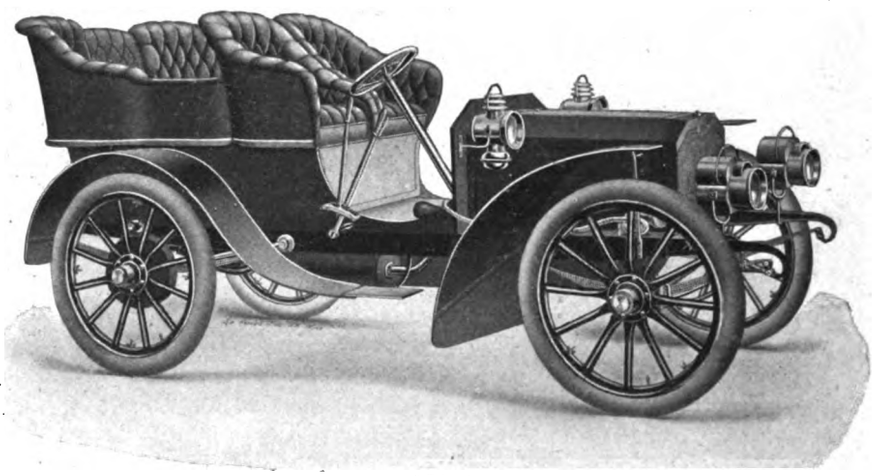
Locomobile Co., of America, Bridgeport, Conn., heretofore apostles of steam, make a display of gasolene cars so formidable and so extensive as to demonstrate effectively that their venture into the new field is neither equivocal nor half hearted. They showed four striking models, a 26 horsepower touring car with King of Belgium



MOYEA TOURING CAR.

body, a Limousine (the first American car of the sort), and a touring car with canopy top and glass front. The chassis is made in two styles, equipped with either two or four cylinder motors of improved construction. In both motors the centre section of the engine casing is the one which is supported from the iron shaft frame, thus permitting the dropping of the lower section to give access to the crank chamber, and, if necessary, the removal of the upper or cylinder section. All valves are made most accessible. The exhaust and inlet valves are removable through the same opening, and are held in place by a very simple arrangement of yoke and single bolt. A ball governor operates directly upon the throttle, which is of unique pattern, consisting of two concentric members, one of which is movable by the ball governor, while the other is rotatable with relation to this, and is controlled by a hand lever upon the steering position. The jump spark is used in the igniter system, with both gear driven generators and storage batteries. Two batteries are used in conjunction with the generator, and a novel arrangement of automatic switch controls the charging of the batteries from the generator when its potential has reached a predetermined height; thus the batteries are always fully charged, and may be used, or used only for starting, and for running the machine until the generator has attained a predetermined speed. The instant of ignition is controlled simultaneously with the variation in position of the throttle by the throttle governor. In addition to this automatic igniter governor there is a hand adjustment through a lever on the dash. The sliding gear type of transmission is of very compact form, and gives three speeds forward and one reverse, with a direct drive from the engine to the countershaft on the high gear. All changes of speed in the change gear are secured by the movement of a single lever. The regular brake is pedal operated, and acts directly upon the countershaft, while the emergency brake acts upon the drums of the sprockets of the rear wheels. The latter are lever operated. An irreversible steering mechanism of the worm and segmental type is used. The wheel base is 84 inches with 51-inch tread. Forced circulation is used, induced by a centrifugal pump, which is gear driven. The water tank is carried on the front of the dash just under the bonnet. The lubricating tanks are secured to the water tanks and project along the side of the cylinders. A unique feature in the lubricating system is an interconnection between the main valves and the igniter switch, which insures turning the oil on and off as the igniter switch is thrown either into operative position or cut off position. Oil is fed directly to the crank cases, and the splash system of lubrication is used entirely. Another novel feature is an air mixing valve located back of the carburetter and adjustable for any variations of hot and cool air. Thus air of any desired temperature may be admitted to the carburetter. A novel form of cone clutch is used, obviating all end thrust. It is leather faced and mounted upon a long sleeve, and has its spring members arranged exteriorly and on opposite sides of the sleeve. Any desired type of body may be used on the complete chassis.

Pan-American Motor Co., Mamaroneck, N. Y., who exhibit for the first time, show two attractive cars and a standard chassis,



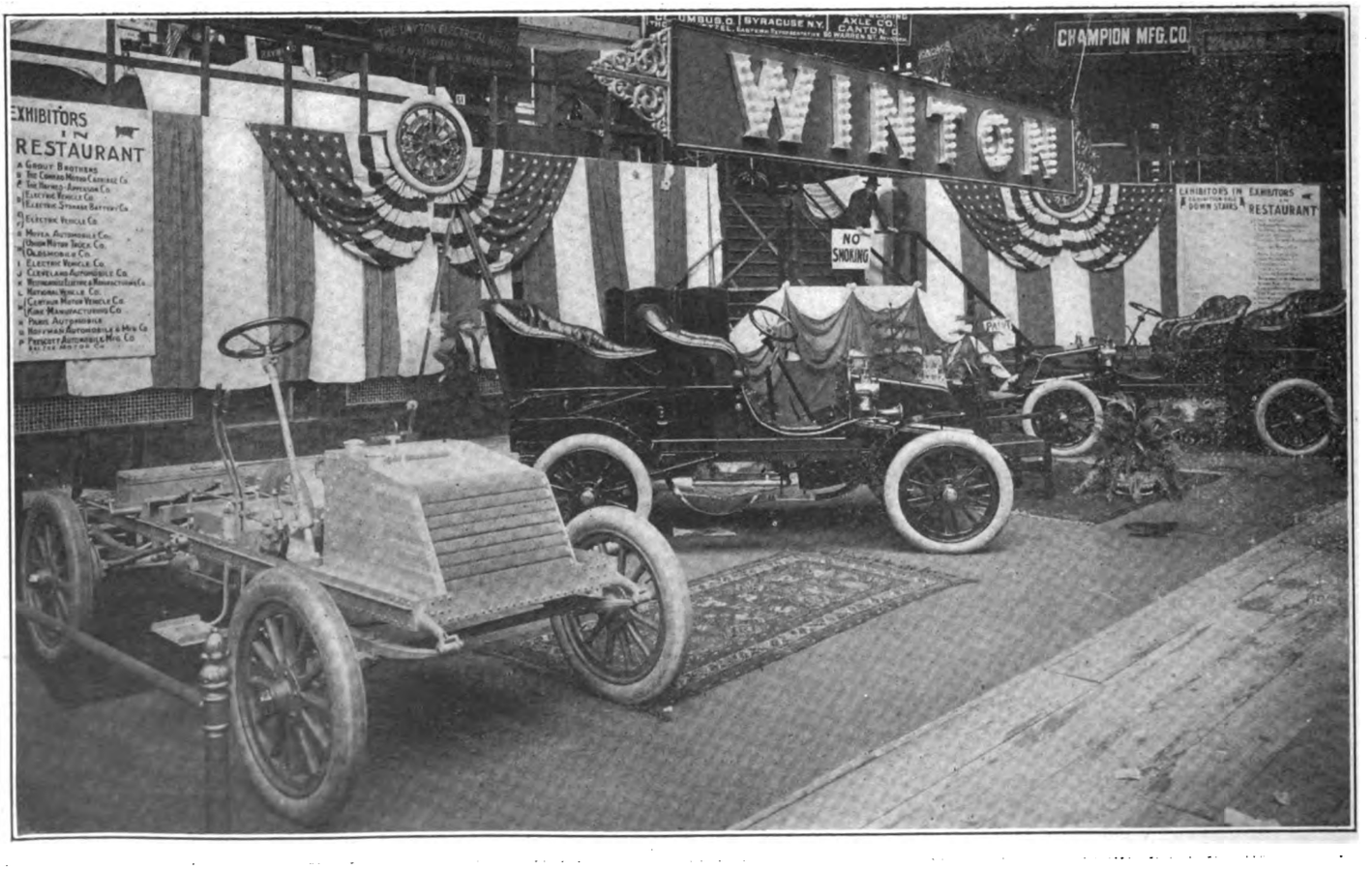
MATHESON TOURING CAR.

which was built under the supervision of Mr. James E. Woodbridge after the design of Mr. William M. Power, the well known gasolene engineer, to display the well arranged disposition of the mechanical parts. Both vehicles are of the tonneau type, and have, respectively, 84 and 96 inch wheel bases. Four cylinder motors are used, with a sliding gear transmission drive from a countershaft to the rear wheels. The engine has some novel features, particularly in the arrangement of exhaust and inlet valves, which are formed concentric and both removable by simply loosening a retaining nut. The inlet valve is arranged to cover the stem of the exhaust valve, the stem of which is hollow, thus giving an unusually large exhaust valve with all the benefits of the incoming charge as a cooling medium. The engine is normally governed by a centrifugal governor controlling a throttle valve arranged adjacent to the carburetter, which is of the float feed type. This throttle valve is also controlled by a foot pedal, which acts as an accelerator. In addition, another throttle, governed by the handle lever on the steering column, may be used to cut the motor out entirely if desired. A unique lubricating system is employed, in which the main oil tank, which is carried adjacent to the cylinders of the engine, has its oil forced into the sight feed lubricator on the dashboard by water pressure induced by the circulating pump of the cooling system. All parts of the contact device for the ignition circuit are inclosed in this arrangement upon the outer end of the cam shaft and may be readily removed. The ignition is controlled by a hand lever arranged upon the steering column. Two brakes are provided, one pedal operated and acting upon the differential, while the second is lever operated and acts directly upon the sprocket drums of the rear wheels. The sliding gear transmission gives three speeds forward and one reverse, all of which are controlled by a single lever. On high speed, drive is direct from the engine to the countershaft, with no intermediate gears. The reverse lever pulls up just in front of the heelboard. The crank cases are spherical in form, and by using pickups on the crank the splash system of lubrication is used, dispensing entirely with an oil feed to the cylinder. All parts are thoroughly encased, even to the cam shaft and operating cams. To provide for the necessary flexibility between the engine and transmission gears a universal coupling is provided just in rear of the movable clutch member. The clutch interlocks with the brake, necessitating a withdrawal of the clutch upon application of the brake. The frame of the chassis is set very low, giving a rakish body and low centre of gravity. From an æsthetic standpoint, the design and appointments are elegant and received well merited attention.

Packard Motor Car Co., Warren, Ohio, exhibit, in addition to their regular tonneau

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machine, a car showing radical departures from their well known product. It is, strictly speaking, a machine built on the Mors plan, having a complete chassis with removable tonneau and detachable front body portion. A four cylinder vertical engine, giving 25 horsepower, with novel governing system, is used. This engine is arranged at the extreme front of the machine, and is ordinarily controlled by a ball governor, which controls the lift of the inlet valves and simultaneously advances or retards the ignition. A lever traversing a segment arranged concentric with the steering wheel is connected with the governor, and may be used to neutralize its effect. This lever may be used to accelerate the speed of the engine beyond the governor limit, or may be used to retard it. It, of course, simultaneously varies both the instant of ignition and the opening of the inlet valves. The Packard sliding gear transmission is used, and an interlock is provided between the change gear lever and the clutch pedal, necessitating the throwing of the clutch before changing the gear. The regular brake is arranged directly upon a drum carried on the main driving shaft at the rear of the change gear box, and this shaft is provided with a universal coupling and drives through bevel gear to the differential upon the rear axle. All parts are thoroughly incased, and, as far as possible, run in oil. The oil is fed to the engine cylinders and main bearings under pressure induced by a pump arranged in the case of the oiler and driven from the cam shaft. The regular Packard carburetter is provided, with a single float feed chamber and two carburetter chambers, each one arranged to take care of two cylinders. A forced circulation of water is used for cooling, and is secured by a positively driven gear pump. The water tank is located at the extreme rear and the gasolene tank under the front seats. A novel arrangement of space or distance bars is used upon the rear axle, and lies just under the half elliptic springs, and is connected at its forward ends with the spring shackles. The wheel base is unusually long—94 inches. Thirty-six-inch wheels are used, with 4-inch detachable tires. In addition to the engine oiler a hard grease oiler is arranged upon the dash, with feed tubes connecting with the bearings of the transmission system. The ignitor circuit may be cut off by depressing a push button arranged in the frame of the steering wheel, and in addition a two way switch, with bodily removable handle, controls the circuit from either of two batteries. A gauge on the dash shows at a glance whether or not the water is circulating properly.

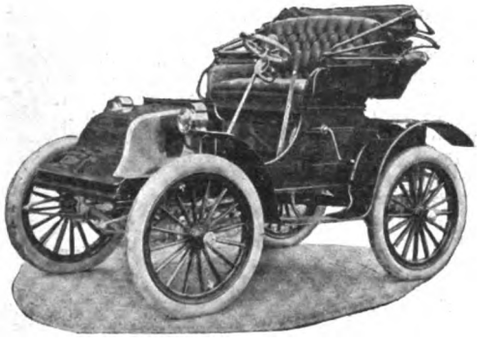
This car embodies the finest features of mechanical construction, and its details are particularly well worked out. It is fair to presume that the new model will become, if possible, even more popular than the excellent machine heretofore so successfully marketed.

The Berg Automobile Co., New York, exhibitors for the first time in this year's show, display four very handsome models of gasolene vehicles, one of them a closed car, the inclosing portion being removable. They conform closely to the general type of foreign machines, and are provided with the tonneau, charrette, and tonneau with detachable top bodies. Two styles of chassis, varying very little except as to dimensions, length of wheel base and tread, are used with these various bodies, practically the only difference being in the power and motor equipments.

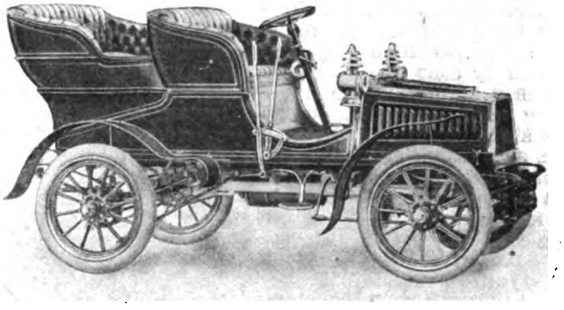
The tonneau, with and without top, each has a four cylinder engine, while the other tyue has but two cylinders. The chassis comprises a wooden frame, reinforced with steel side and corner plates, and the forward axle is dropped and of a form to give it a trussed strength. Half elliptic springs are used forward with semi-elliptic at the rear. The cooling coil has a novel feature, inasmuch as the side plates, which close in the sides of the tube headers, are removable and any of the tubes may be cleaned at will.

The water tank is located just under the body and forward of the rear axle. A centrifugal pump, driven from the flywheel, produces forced circulation. The lubricating system for the engine is a direct feed, and a novel arrangement of piston driven pump is used for forcing the oil into all parts of the mechanism. This pump is inclosed within the oiler casing, and is driven by a belt drive. A rather unique style carburetter is used, which might be styled a compensating carburetter. It comprises the ordinary float feed chamber, having at the outlet a valve automatically controlled by a ball governor arranged forward of the engine and adapted to throttle the engine to predetermine speeds. Upon the steering pillar there is a lever, connected with this valve mechanism, by which its position may be varied to throttle the engine to any desirable degree independent of the action of the governor. A pedal is also provided at the right of the steering pillar, which permits throwing this valve wide open for the purpose of quick acceleration. In the throttling action of the carburetter valves the supply of air is also automatically varied, thus changing the mixture to correspond to variations in position of the throttle valve. A sliding gear type of transmission is used, controlled by a single lever, giving four speeds forward and one reverse. The secondary ignition system which is used is controlled by hand through a lever arranged upon the steering pillar. The contacting device used in the ignition system is novel, and comprises an insulating ring with contacts arranged upon its inner surface. The co-operating contact member is carried upon a cam shaft, and comprises a weighted spring member, which is dragged over the contacts of the ring member. The purpose of this weighted spring is to increase the tension between the contact members as the speed of the engine increases. As the spring not only has its own force, but the centrifugal action of the weighted member, it produced a firm rubbing contact. The steering gear, instead of using the worm and segment or rack, has arranaged within an oil tight casing a nut which traverses the screw threaded end of the steering post; this has upon its outer surface a rack meshing with a pinion, fast upon a short shaft, which bears at its end the steering arm affording direct connection with the individual pivoted wheels. An interlock is provided between the regular brake and clutch and the emergency brake and clutch. This necessitates releaesing the clutch upon application of the brake.

The regular brake is controlled by a pedal and acts upon the cam shaft, while the emergency brake acts directly upon drums upon the rear wheels. In the two cylinder machine a direct bevel gear drive is used between the change gear mechanism and the compensating gear of the rear axle. In the four cylinder machine individual wheel drive is secured from a counter shaft through sprocket and chain drive. Altogether the Berg is of simple and admirable construction, and has omitted many of the automatic devices which are liable to give more or less trouble. All valves are accessible, and ample provision is made for inclosing the several parts of the mechanism. The four cylinder car carries a supply of gasolene for 200 miles, while the small one has a tank capacity of 150 miles. The maximum speed of the heavy machine is forty-five miles an hour, while the lighted one is designed for speed up to thirty-five miles an hour.



HAYNES-APPERSON OF 1903.



TOLEDO TOURING CAR.

The Olds Motor Works, Detroit, Mich., show, of course, the famous Oldsmobile runabout, the one that set the fashion to the world and the success of which induced a host of others to embark in the manufacture of runabouts. But it was not the runabout that caused knowing visitors to blink, nor even the tonneau car, of which there had been hints and which was exhibited for the first time—it was the presence of an Olds coupe, of which no intimation had escaped; none had reason to even imagine that the Olds people had a closed car in prospect, and its unexpected appearance was probably the biggest surprise of the show. It is a handsome little creation with rounded front and two seats, and is operated from the inside; it is of 5 horse power and priced $1,100.

The new touring car—price $1,250—also marks a radical departure. The tonneau has side entrances on both sides, and the original curved dash of the Oldsmobile has been retained behind the bonnet. The motor is of the two-cylinder, opposed type, and of

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eight horse power. The remainder of the chassis is of the Oldsmobile side spring construction. The new Oldsmobile carburetter is used, the transmission gears running in oil although only one controlling lever is used, making the car easy to handle, a wheel or centre lever for steering being furnished as options.

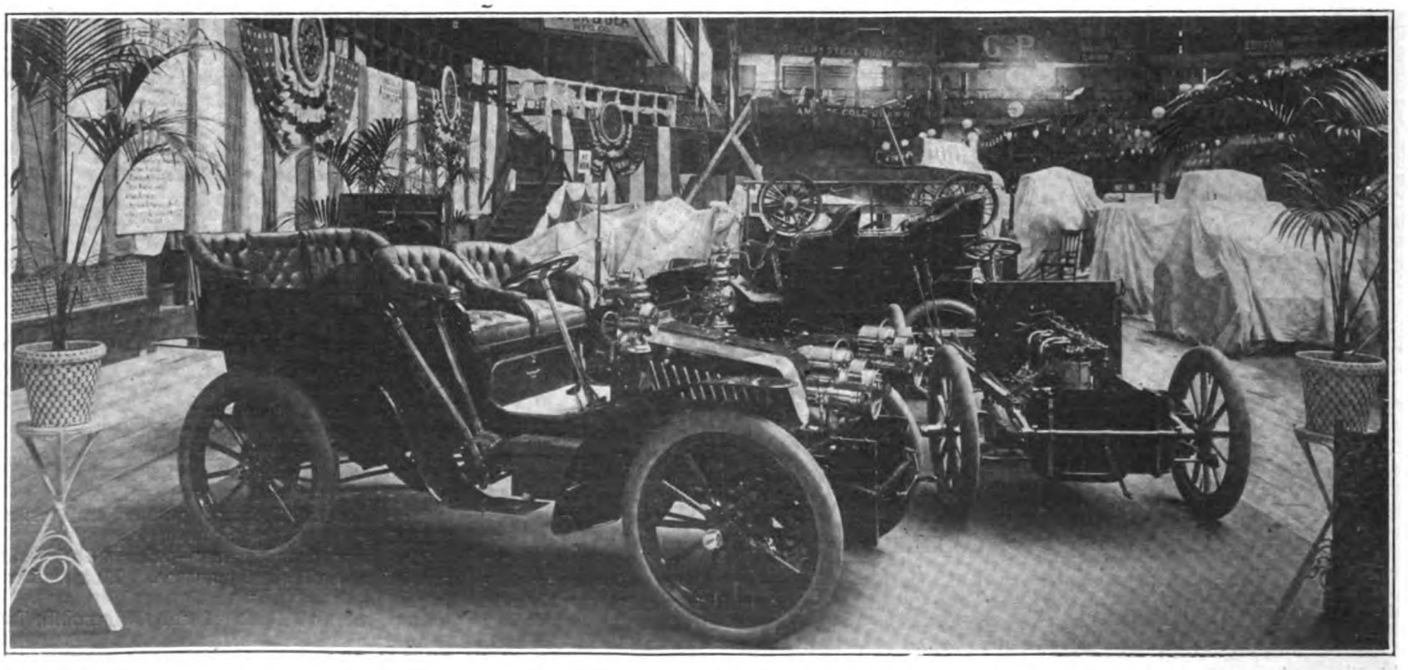
In the single cylinder runabouts of the reachless type, with side springs, few changes have been found necessary in its construction, the main ones being truss front and rear axles and improved carbureter, eliminating the use of the gasolene pump and having only one connection with the tank, and giving greater power with the mixture. They still use mechanically operated valves for both the inlet and the exhaust, both being operated on the one shaft, so that the timing is bound to be accurate. While the appearance at the Paris show of mechanical valves started the world talking about them, the Olds is evidence that they did not originate abroad.

The new Moyea Automobile Co., New York, have done themseleves proud in their touring car, one of which is exhibited. It is an impressive creation. It weighs approximately about 1,900 pounds. Wood lined steel frames, with steel hangers, live rear wheels and solid forged front and rear axles are used, the engine and gear case being fastened on a false steel angle frame. The motor is of a four cylinder upright type, 4-inch bare by 5½-inch stroke, of 16 horsepower, which is transmitted by cone friction clutch at 1,200 revolutions a minute. Slide transmission gears are used, first and second speed and reverse six pitch; third and fourth speed, eight pitch, on a train balladeur style. The atomizer is of a special type of constant level float, which is never regulated, the air only being regulated by variable ignition and independent from each other. The atomizer regulates the speed of the engines. Cylinders are cooled by water and fan driven by the motor, which has a water jacketed intake, exhaust valves and cylinders; a centrifugal pump is used, but without radiating coils, but has a water tank, which is at the same time a water cooler, is at the front of the car, and consists of a nest of banked tubes, which give a very thin water surface with a maximum of air cooling surface. The ignition is by a high tension current. The gasolene is fed by gravity, and carries fifteen gallons. Two outside band brakes are furnished and one inside on differential. All the brakes are double acting, and when applied release the driving clutch. A spark advancer and accelerator are attached to the steering pillar under the steering wheel. The upholstering is of genuine pigskin, and is luxurious to the highest degree.

The Pope-Robinson Co., of Hyde Park, Mass., exhibit three unusually fine cars, employing the well designed four cylinder motor formerly used, but which has been improved in several details. In place of the air cooled head, a water cooled head and cylinder are now used. The motor is governed by a ball type of governor acting directly upon a throttle valve. The governor may be thrown out of operation or varied at will; a single Longumare carburetter is used for the four cylinders, in place of the four carburetters formerly used. The change gear mechanism is of distinctive design. Both the gears on the main shaft and countershaft are in mesh, and either train of gears giving three speeds forward and one reverse may be selected and used by bringing into engagement its corresponding metallic clutch member. On the high speed all gears are idle, and a direct drive is secured between the engine shaft and the counter shaft. The ignition system, as heretofore, is a touch contact spark, and by mounting the lower end of the contact rod in a pivoted yoke the instant of ignition may be changed at will by varying the position of the yoke relatively to the operating cam. This does not in any way affect the speed of the engine unless the accelerator is in use with the governor cut out. All vehicles of this company are made on a standard chassis, having a channel iron frame, which was adopted by them more than three years ago, and which is now almost universally used by the best makers of gasolene cars, in place of a reinforced wood frame. On the whole, the car has many features to commend it. Its control is easy and elastic, free from shocks, due to its peculiar change speed mechanism, which is practically noiseless.

Conrad Motor Carriage Co., Buffalo, N. Y., show a new type of runabout costing $750, with a full square bonnet and a folding or disappearing seat in the rear, and which embodies an entirely new and fetching practice for this class of vehicles. It is fitted with double cylinder upright engine of the De Dion type in front, connected for driving by sliding gear transmission, which in turn is connected with the rear axle by sprocket chain. The size of the engine is 3½x3½, and at 950 revolutions develops 8 horsepower. It is fed with new water cooling attachment, consisting of a top and bottom tank separated by a rotating coil, which is placed squarely in front of the machine and above the axle, and is covered by a Mercedes type of head. The frame of the machine is of bent angle iron with full elliptical springs. It has wheel steering gear, with all throttling and controlling levers on the steering pillar at the finger's end. The foot brake disengages the clutch before the brake is applied. To all appearances this car is a simple runabout, but the rear apron opens upward, disclosing a seat which enables the car to carry four passengers. This is a very taking feature of the show, and is attracting much attention. The tonneau car has a double cylinder, 12 horsepower, upright, vertical motor 4½x4½, developing 12 horsepower at 900 revolutions. The drive is by means of the sliding gear transmission type, three speeds forward and one reverse; fitted with 30-inch wood wheels and 3½-inch double tube detachable tires. It is claimed that this car embraces all the best features of the high priced machines, its price being only $1,250. The tonneau is detachable, and a wooden apron is provided to replace the tonneau for speeding purposes.

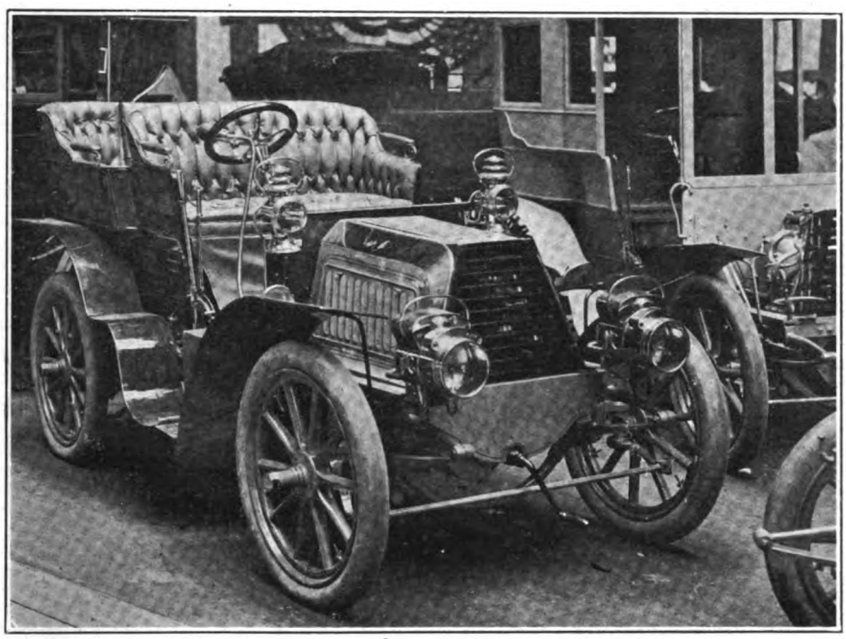
Matheson Motor Car Co., Limited, Grand Rapids, Mich., exhibit for the first time at this year's show an attractive car of the four-cylinder type, which is as nearly as possible an American Mercedes car in frame, running gear, transmission motor, and cooling system. One distinguishing feature and one different from the Mercedes costruction is a direct drive through bevel gears to a divided rear axle having universal joints each



PACKARD DISPLAY.

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side of the differential, to give the required dish to the driving wheels. A ball race is formed just back of the teeth on the bevel gears to take up all thrust. The engine is controlled as to speed entirely by the throttling system, manipulated by hand lever on the top of the steering wheel. The ignition is also hand adjusted for various speeds and from the same place. One of the new features of the engine is the intersected thread on the igniter plug, which permits removal of the plug upon a third turn of the plug. Both the exhaust and inlet valves, which are mechanically operated, are removable on the intersected thread principle. The valve seats are taken out with the valves and may be replaced in a very few moments. The cylinders are turned, both within and without, to a uniform thickness of metal, and the water jacket is shrunk on to the outside, which insures a light cylinder and



BERG TOURING CAR.

one which will maintain perfect form even under excessive heats. A driving shaft for the back wheels runs inside a sleeve which carries the back wheels on ball bearings. The wheel base is unusually long, being of 95 inches and standard tread. Great ease of riding is claimed with contemplated springs, which are a combination leaf and coil spring. Alternating magneto is used starting on the first half revolution of the starting crank. Machines are equipped with 25 H. P. motors and started by air pressure from the seat. This same air pressure forces the gasolene into the carburetter and does away with the shunt muffler used by the Mercedes.

International Motor Car Co., Toledo, Ohio—The 24 horsepower Toledo touring car, employing an improved motor of the four-cylinder upright type, has as novel features copper water jackets for the cylinders and bodily removable heads, in which are arranged the inlet and exhaust valves. Both these valves may be readily removed by pulling out a locking pin and turning back a hinged yoke. A centrifugal governor acts upon the throttle valves, of which there are two, one for each pair of cylinders. A link connection is also formed between the throttle valves and a foot pedal, by which the operation of the governor may be modified and the speed of the motor accelerated. The instant of ignition is controlled by the hand lever arranged concentric with the steering pillar and having its operating rod carried through it. The carburetter is of the float feed type, and has the usual adjustments for varying the mixture. An Apple igniter belt driven from the flywheel is used. Splash feed is used in the crank case, with mechanical feed for the lubricating oil of the cylinders. In addition there is provided a grease cup, which furnishes the necessary lubrication for the change gear mechanism, the gears of which always run in oil. A unique housing is provided for the igniter coils and oilers, all of which are located in a tight box dash, to which the bonnet is hinged. In addition to the Apple generators there is also provided a battery. A three way switch is used for cutting out both the generator and battery or cutting in either of them. The brake pedal and clutch pedal are interconnected, necessitating the throwing of the clutch upon application of the regular brake, which acts upon a drum upon the countershaft. The change gear is of the sliding gear type, giving a direct drive of the engine to the countershaft on the high speed without intermediate gears. The several gear changes are made through single lever, which gives three speeds forward and reverse. A very novel and effective lock is provided for the change gear lever. This lever moves on a notched sector, and has a detent for positioning it for the various speeds. A handle for operating the detent is provided, with a pin which, in the forward speeds, engages a projection extending outwardly through the handle from a thumb operater push button. To secure the reverse position of the handle this button must be pushed down, and thereupon the pin of the detent handle passes over it and permits pulling the lever backward into the reverse position. It secures an absolute lock for preventing unintentional movement of the change gear lever from the go ahead to the reverse position. The cooling coil is of the honeycomb type, combined with the water tank and closing the forward end of the bonnet. In addition to the pedal operated brake there is a lever operated emergency brake acting upon the drums of the rear wheels. This lever is automatically locked in any position by the notch sector method. The tonneau body, which is of the King of Belgium type, is most luxuriously appointed and attracted more than ordinary attention. The upholstery is unusually deep and high backs are provided throughout. A special locking device is provided for the tonneau door, which absolutely insures it against accidental opening.

The Winton Motor Carriage Co., of Cleveland, Ohio, exhibit this year four vehicles—two of the tonneau type, one chassis, and the "Winton Bullet." The same general lines of construction used so successfully by the Winton company have been carefully adhered to, with many minor improvements and an increase in the power of the engine, which is now made 20 horsepower. It is horizontally disposed, and of the two-cylinder type. Where formerly some of the operating parts were mounted upon the body, they are now without exception carried upon the frame of a complete chassis. The steering wheel is now hinged to the steering pillar, and may be tilted forward or securely locked in operative position. The engine, as heretofore, is governed by the air pressure system, controlling and varying the opening of the inlet valve, and being controlled by a foot button or auxiliary hand operated valve. All parts of the mechanism are completely inclosed, and water, gasolene and oil tanks are arranged under the bonnet. Forced circulation is used with direct driven gear pump. One of the latest features on this year's machine is a modified contact device of the same general principle as heretofore used, but now arranged with a vibrating member having a cam surface acted upon directly by a cam on the end of the cam shaft. This contact member is carried in a box having a glass face and revoluble with relation to the cam shaft for adjusting the instant of ignition. The parts are thoroughly inclosed and yet visible at all times, and so arranged as to preclude possibility of the admission of all foreign substances. The regular Winton planetary gear system is used, controlled by two levers, giving two speeds forward and one reverse. One of these levers is connected with an emergency brake acting directly upon a drum upon the main shaft of the engine, and easily applied as the high speed gear is thrown out. The muffler is arranged to be opened directly to the atmosphere, where noise is not objectionable. The bronze connecting rods heretofore used have been discarded and drop forged steel rods, with bronze bushings, adopted. The batteries for the ignitor circuit are inclosed in a tight, galvanized iron box, lined, to prevent short circuiting, and are arranged in two sets, either of which may be thrown into use by a two-way switch arranged on the heelboard. The battery box is secured upon the frame at the extreme rear, and is accessible by raising a trap in the floor of the tonneau. The tonneau body is of the "King of Belgium" type, which is coming into almost universal use by automobile builders. The water pump is inclosed in a casting having a movable face plate, which casting forms the bottom of the crank case. A removal of the face plate gives easy access to the interior of the pump.

Peerless Motor Car Co., Cleveland, Ohio, whose cars are staged by the Banker Bros. Co., of New York and Pittsburg, exhibit a finely finished chassis mounted on four wooden pedestals about sixteen inches high. They also show complete cars, one of a big four cylinder 60 horse power, with vertical motor, of course, the Peerless having been one of the earliest to adopt that type. The frame is of channel steel with a drop

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centre for the purpose of making the parts and mechanisms more accessible. Both front and rear wheels are pitched inward, after the manner of all vehicles not run on prepared tracks. The pitch of the rear wheels is made possible by a flexible axle. Last year's motor consisted of two separate cylinders, but in the new model the two cylinders are combined into one casting, making the motor a twin cylinder and doing away with the crank disks in the crank chamber, by using a one-piece crank with a single throw. Two hand-holes are placed in the bottom of the crank case for inspection or replacement of connectiong rod bushing. An automatic throttle governor on the intake is used which makes the motor very flexible. Ignition is by jump-spark, with their own patented mechanical vibrator. The water circulation is furnished by a centrifugal pump driven by gears. The lubrication is by force feed. The starting crank is stationary in front of the car, and is operated by a dog clutch instead of chain, the motor being started by a half turn of the crank. The drive is by means of a universal shift, and bevel gears mounted on ball bearings. The differential is also mounted on ball bearings, so that the end thrust of the bevel gear is provided for. The bevel pinion is mounted between two sets of ball bearings, which takes up the end thrust in the bevel pinion. Power is transmitted to speed gear by means of a cone clutch, which is engaged by means of a spring and disengaged by means of foot pedals or brake lever. The speed gear is connected to the driving gear by a universal shaft. On the high gear the motor is connected directly to the rear axle with no gears in use. It is assumed that as the car is used about 90 per cent. of the time on the high gear, this greatly lengthens the life of the gear. The change of speed motor is effected with an automatic locking device which prevents the shifting of gears unless the cone clutch is disengaged. A powerful brake on each rear wheel is operated by a lever at the right, which disengages the clutch and is held by a ratchet until released. A foot brake operates on the drum between the motor and the compensating gear, and also disengages the clutch. By means of a knuckle joint and sleeve the upper part of the steering column is broken, throwing the steering wheel away from the operator when taking or leaving the seat. All the wheels are ball bearing, and this fact is to be noted here, together with the fact that the shaft and bevel gear and differentials already mentioned are also mounted on ball bearings, which makes this one of the most advanced types in the show.

The Autocar Co., Ardmore, Pa., exhibited two complete Autocars and a chassis, one a tonneau, and a runabout with top.

The engine, as heretofore, is of the two cylinder, horizontal, double opposed type arranged transversely at the body and at the forward end under the bonnet. It is of 10 horsepower at 1,000 revolutions. The change gear mechanism is of a simple form of sliding gear with direct bevel and spur gear drive to the rear axle. A universal coupling is provided in the main line of shaft between the change gear and rear axle to provide the necessary flexibility; the trunnions of this coupling are hollow to provide for oiling. A water tank is arranged below the bonnet on the dash, and the lubricating oil is carried in a tank secured to the water tank. All parts are thoroughly encased, and splash lubrication is used wherever possible. A unique form of clutch is shown, comprising two co-acting clutch members embracing an inserted cork fin projecting from the inner face of the rear flywheel. The main flywheel is carried forward of the engine. This clutch is controlled by a lever arranged at the left hand side of the seat, and the handle of the lever has a rotary movement, which controls the throttle of the engine. In addition to this throttle control, the igniter controlling lever and the change gear lever are carried upon the steering stanchion. The change gear gives three speeds forward and one reverse, all controlled by single operating lever. Two brakes are provided, one a regular brake, foot operated and acting upon the drums of the rear wheels, the other an emergency brake, also pedal operated and acting upon the main pinion of the rear driving construction, a novel feature. The compensating gear upon the rear axle is of the spur type, and is driven by a pinion mounted in the same case with the main spur gear, and in turn is driven by a bevel gear drive from the main driving shaft. End thrust on the intermeshing bevel gears is taken up by ample ball bearings, which are adjustable. To prevent pounding and knocking of the springs when the vehicle is under a heavy load the two elliptical springs at the rear are each provided with an auxiliary bow spring, which comes into action and upon heavy jounces prevents the usual pounding. A direct chain driven centrifugal pump induces a forced circulation through an ample cooling coil, and as the water tank is located above both the engine and the cooling coil, the centrifugal pump permits a natural circulation when the machine is not in operation. A novel muffler, having twelve rectangular compartments, with the perforations between one compartment and another staggered with relation to each other, gives an exceedingly compact and practically noiseless muffler. All parts of the mechanism are accessible, simple in construction and of sufficient strength to secure great durability and at the same time give many features of interchangeability.

One unique feature of the Autocar exhibit was the placing of a mirror below the entire length of the chassis, thus showing every detail of the mechanism from below.

Thomas B. Jeffery Co., Kenosha, Wis.—Rambler cars.

A touring car at $750; single cylinder, 5x 6; 6 horsepower, weighing 1,200 pounds, with both valves mechanically operated by the same shaft; float feed carburetter with auxiliary inlet, which is automatic and flushed from the seat; planetary gears; one lever control, with thumb throttle control on steering bar; automatic governor for spark; drum brake on both rear wheels, which is auxiliary and regular on transmission; thermo-syphon system for water cooling; detachable gasolene tank with safety reservoir holding one gallon, which is shut off from the rest of the tank so that when the regular tank is exhausted a gallon of gasolene is always in reserve for twenty-five miles; fur full elliptic springs.

A decided improvement has been made in the design of the body; it is six inches longer, has removable air shutters in the sides, the shape of the bonnet has been altered, fenders have been added and a solid back high seat; the color of the body is auto red; an automatic grease cup displaces last year's gravity feed on the main shaft; centre steering with transverse lever. The governor and the two to one gears are covered, and the gears run in oil, so that the only slight trouble had with the governor in the New York-Boston reliability run is now obviated. Artillery wooden wheels of their own make, with 1¼-inch spokes, are used with single tube tires. The water reservoir is a large brass tank with about 380 feet of three-quarter-inch brass radiating tubes.

The Searchmont Automobile Co., of Philadelphia, Pa., exhibit two cars of attractive design and embodying features that are not to be denied. An armored frame, in the chassis is used, and is provided with a subframe of angle iron, upon which are mounted the motors and driving gear. Two cylinder motors are used, of improved pattern, having cylinders 4½ inches in diameter, 5-inch stroke and with ample provision for getting at the interior of the crank cases by simply removing side plates. The inlet valves are arranged on top of the extension projecting from the cylinder, and the exhaust valve is arranged immediately underneath, making both accessible and providing ample water space about the valves and cylinders. Forced circulation is used, induced by a direct driven geared pump. The motor is controlled by a ball governor, which acts upon the throttle and simultaneously varies the instant of the ignition. In the main rod connecting the governor with the throttle valve is interposed a spring cushion embracing the end of a lever, which permits varying the ignition by hand adjusted means independent of the action of the governor. A foot pedal is used for accelerating the speed of the engine by varying the working position of the governor or cutting it out of operation. A unique oiling system is provided for the engine, which comprises a main oil tank, having some ten piston pumps arranged within it and actuated by a sliding cam connected directly with the cam shaft. Each of these pumps is connected to one of the main bearings of the engine, the cylinder or the change gear mechanism through independent tubes, thus securing a forced feed of oil. A float feed carburetter is provided, with the usual adjustments for varying mixture, etc. The sliding gear type of transmission is used and controlled by a single lever, securing four speeds forward and one reverse. An interlock is provided between the clutch pedal and the emergency brake, assuring the throwing of the clutch upon the application of the brake. The regular brake is pedal operated, and acts upon the counter shaft, while the emergency brakes are lever operated and act upon the independently driven rear wheels. An Apple generator is used and a novel drive is provided for it. It is secured to the frame of the chassis at one side of the flywheel, and an intermediate spring pressed friction wheel transmits motion from the flywheel to the generator wheel. The struts for holding this driving member are adjustable, giving ample provision for taking up all wear. It is a most ingenious contrivaence. The water tank is located at the extreme rear and below the body, provision being made for filling this tank from the outside of the body.

A novel five seat arrangement is secured in the tonneau body by extending the door upholstery clear to the bottom and leaving it loose from the centre down. By simply raising the end of this upholstered portion the base of the seat drops down from the back, and is covered by the loose portion of the upholstery filling in the door space.

A novel form of emergency "cut out" and means for locking the vehicle cousist of a press button arranged in the frame of the steering wheel and co-acting with a removable plug, which breaks the igniter circuit and thus makes the vehicle inoperative.

Shelby Motor Car Co., Shelby, Ohio, exhibit two new cars, incorporating some new and original features. Two models are shown, one, having a single cylinder, being a single seated carriage with a combination drop seat; the other having a tonneau body with a double cylinder motor. The motor has an

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open end cylinder fitted with two pistons. The two side connecting rods connect the back piston to the crank shaft with the centre of the crank shaft connecting the front piston to the same, the explosion, of course, then being placed between the two pistons, driving both pistons in opposite directions at the same time, but both pistons transmitting the power simultaneously to the one crank shaft, making a perfectly balanced motor. Great economy is claimed for this method of exploding the gases in about half the time that is taken in an ordinary single motor with the same amount of stroke. The pump operating from the flywheel of the motor cools it by circulation to the radiator in front of the car. Jump spark operated by batteries and magneto. Generators furnished when desired. Planetary transmission gear is used, giving three speeds forward and one reverse through one set of gears only, and direct transmission on the high speed. When the car stands still and the motor is in motion the gears are all idle. Wheel steering is employed, with a telescopic pillar rod, so that it can be adjusted to the height of the operator. The driving car is of the same general construction, having two sets of cylinders, with four pistons, and furnishing 20 horsepower. A reversible steering gear, which is interlocking, is used. It has a bell shaped worm, engaging the pinion of the steering rod, so that no shock on the road wheels is carried to the steering wheel, but the steering wheel readily controls the front wheels. All the supply tanks, such as water, oil and gasolene, are carried in front under the hood, so as to be very accessible, a gauge being on the dash showing the amount of oil, water or gasolene that is on hand at all times, also showing any leakage of the water supply, a special feature of this system being that should any leakage in the water supply occur the operator would instantly notice it on the gauge. The oil supply is placed immediately over the water tank, which leaves the oil hot and limpid. A carburetter of their own design, an invention of their Mr. Leppo, which throttles so as to give practically the same action as the throttle on a steam engine, enabling the operator when running in a crowded street with the high gear, the foot throttle controls it perfectly with the aid of this carburetter. It is a balanced carburetter, so constructed that the gasolene stands at a constant height irrespective of any tilting position the car may have; the needle valve is so adjusted that the supply of air and gasolene is controlled by the same operation at the same time. Regardless of the position of the throttle the percentage of the mixture is always the same.

Cadillac Automobile Co., Detroit, Mich., show one complete vehicle of the runabout type with a detachable tonneau and a complete chassis. An angle iron frame supported on half elliptic frames fore and aft and of unusual length supports, under the forward seat, a single cylinder horizontal motor of 7 3-10 horse power, which drives through transmission chain to the differential of a divided rear axle. The Cadillac car is entirely new and shown for the first time at this year's show. The low speed gear runs in an oil bath, and, in fact, the entire gear system is thoroughly inclosed. The main engine cylinder is smooth as to the exterior, and provided with a flange or cup which is provided with a water intake for the cooling system. A spun copper water jacket may be clamped to this flange and dispenses with the use of all gaskets, as the lower end of the copper shell is flanged and itself serves as the gasket. The inlet valve is mechanically operated and the main control of the engine is secured by a hand throttle combined with hand adjusted ignition of the jump spark type. A single hand lever gives the high speed forward and the reverse, which lever in the several positions may be used as an emergency brake. The low speed is secured by a foot pedal. A pedal operated band brake operating on the differential is also used. A unique form of sparking plug is shown in this engine, and consists of a main plate or support held in place by a yoke and set screw. This support bears two insulated sections, forming really a double plug, and angularly disposed, so that the inner ends lie adjacent to each other and thus a circuit plug is secured without necessitating the grounding of either side of the circuit. A carburetter of the needle valve type with an intake actuated baffle plate secures a positive feed of gasolene without the use of the ordinary float feed chamber. This is made easily adjustable, though it is claimed it requires little change in ordinary running. The car, which, as stated, is featureful and attractive, weighs with tonneau body about 1,200 pounds, and is unusually low priced, selling for less than $1 per pound.

George N. Pierce Co., Buffalo, N. Y., exhibit their well known Motorette, which has not been materially changed from last year's model, save that a 5 horsepower motor is now used. A new model, however, is shown, the Arrow touring car. It has a tonneau body mounted on a tubular steel underframe made of very heavy tubing, the whole of which is supported by four extra long semi-elliptic springs. The motor is a genuine De Dion, 15 horsepower, double cylinder, with a water tank placed in front of it; a ball bearing transmission gear, sliding type, is used, with a single cone clutch in the flywheel and bevel gear transmission on the rear axle and special ball thrust bearing and flexible shaft to gear box. The car when loaded weighs 1,650 pounds. Ball bearings are used on the front and rear wheels, which are of the artillery type. Two double acting hub brakes are furnished, as well as a transmission shaft brake, which is also double acting. The brakes are all interlocked with a friction clutch, so that when any of them are used the motor is disconnected. A motorette Stanhope model is also shown.

The Waltham Mfg. Co., Waltham, Mass., show their new medium weight Orient car, having a single cylinder motor rated at eight horse power, and of the high speed type, making from 1,200 to 1,500 revolutions. In addition to the carburetter they supply an air valve for regulating the motor for atmospheric changes without disturbing the adjustment of the carburetter. It is oper-

THE GENTLEMEN FROM FRANCE.



M. Lucas. A. Clement. Hart O Berg. M. Melinssky. M. Clement's Nephew. M. Clement's Secretary. Henry Fournier.

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ated by a lever at the left of the seat. The transmission gear is on a direct shaft from the motor and operates on a band brake principle. They also have adopted the idea of driving direct from the motor at high speed without the operation of any intermediate gears. The controlling mechanism is one of the simplest in the show, and as a matter of fact the tendency throughout the show seems to be in the direction of simplicity in the controlling mechanism, a multiplicity of both hand and foot levers which require a great deal of ambidexterity, and foot looseness not being as popular now as it was a year ago, when we copied so freely from foreign ideas. The Orient controlling lever is located on the left hand side of the car. In the normal position the lever is not in action and the motor is free to run quietly while the car is at rest. To start the car the lever is pushed forward gently a few inches, which causes the slow speed gear to operate, starting the car slowly forward. A further movement of the lever forward will engage the direct gear and the car will then take the speed according to the pressure given by the foot on the foot throttle. To stop the car the foot is simply lifted from the throttle and the lever pulled quickly back as far as possible against the reverse, which acts as a powerful brake until the car stops, and then, if still held back, will cause the car to move slowly backward until the lever is allowed to take its naturally upright position. When the car is running backward a slight pressure of the lever forward will also act as a brake and stop it. The car is also provided with a powerful emergency brake acting upon the rear axle, but this it is seldom necessary to use except to lock the car fast when standing alone, the controlling lever being ample to handle the car under all ordinary circumstances. Of course, the driver during the various operations is expected to use judgment in pressing the throttle to give the motor the necessary power that may be required. A small spark lever is placed at the left of the seat, and when it is desired to leave the motor running free this is moved back, setting the spark back and slowing the motor to about 250 revolutions per minute, at which speed it will run for some time without attention. A lever operates an auxiliary air valve to regulate the mixture. A tubular running gear is used on this car, but having the constructive novelty of transverse elliptical springs front and rear. It is also peculiar in being the only car in the show having wire wheels with wood rims. The 350-pound Orient Buckboard, with a four horse power air cooled motor, cooled by a revolving fan fixed directly on the motor shaft, attracts a great deal of attention at this exhibit. The speed is controlled by the operator by pressure on the foot throttle and movements of the brake lever. For so simple a vehicle it has a rather long wheel base of eighty inches, and appears unusually low. The tread is but three to six inches, the wood work is finished in natural oak, and the wire wheels, like all the other Orient product, have wood rims. It has no change speed gears, nor can it be reversed. The well known Orient motor bicycle is also shown. Only a few minor changes in the details of construction have been made in it since last season, one of the main ones being an improvement in the belt tightening device.

The Crest Mfg. Co., Cambridge, Mass., show their Crestmobile, so radically changed as regards the position of the motor and the shape of the body as to be hardly recognizable. The new model "D" has the motor behind the front axle, hung on springs, with a bonnet front, quite a change from the old type with a piano box body and the motor exposed in front of the axle. The single cylinder, vertical motor, is still, however, air cooled, but with an increase to 5 horse power, and the wheel base of the carriage has been increased to six feet. The shaft drive, with two speeds and a reverse with a direct drive on the high speed without any other gears in motion has been adopted in place of the chain drive. Their original idea of a special lift on the exhaust valve from the seat has been retained, as has also their method of starting from the seat. Wire wheels have been discarded for the popular artillery wheels with detachable tires. Naturally enough, with all these improvements, the weight is increased to 750 pounds, and the car is sold for a dollar a



pound, indeed the cariage is now styled a light touring car. Another new model "F" is of the runabout style, with a bonnet front, having a 3½ horse power air cooled vertical motor, with a shaft drive for speeds forward and reverse. All the controllers in both these models are done from the seat, and all the mechanism is hung in a frame, so that the body is independent of the motor vibration.

The J. Stevens Arms and Tool Co., Chicopee Falls, Mass., show the Stevens-Duryea car, equipped with a two-cylinder horizontal opposed typ motor of seven horse power, employing an extremely simple valve, a single cam operating the valve of both cylinders. Very little water is required for cooling purposes, the circulation being maintained by a gear driven valveless pump. Four gallons of water only were carried during the trip from New York to Boston and return in the late reliability test, during the six days of continuous use, but one half, or two gallons of this water was used. The motor is started from the seat. The transmission gives three speeds forward and one reverse, all operated by one lever. The clutches are of the expansion shoe type. Lubrication is effected by use of an automatic oiler, it being only necessary to keep the oil tank full. The steering is a modification of the wheel-steering idea, but the Stevens-Duryea people believe that the use of an entire wheel is unneecssary, and therefore use a steering post surmounted by one spoke of the wheel only.

The Automotor Co., Springfield, Mass., exhibit their large touring car having a four-cylinder vertical motor under a square bonnet, with slight swell on top running to a square cooler in front in a diamond shape design, modelled somewhat on the Mercedes plan. A genuinely novel gear drive, which is direct on the high gear, has been adopted, but with the valuable addition of oiltight cases, so that the car can be driven 150 miles without oiling. The transmission gear is of a novel design, being a combination of the sliding and planetary styles, so that in ordinary running, that is to say at a medium speed, the change of speed is made without the use of sliding gears. The aluminum body is mounted on a channel iron frame resting on a full set of platform springs, such as are largely used in this city on business trucks. The full platform spring gear is one having two half-elliptical side springs and one half-elliptical rear spring, the springs all being connected together by the use of shackles and clips, differing from the half platform spring type, having body irons, which is so popular. The steering wheel instead of carrying gears on the end of the upright shaft, carries a separate gear in the steering wheel itself, which allows the placing of the steering post high up in the centre of the dash, leaving a clear floor space for the foot pedals and robes for the comfort of the operator. The steering rod at its base is fastened directly to the steering rod. The make and break commutator is on the dash in front of the operator, a method that is becoming very popular, with the reason too, as one can readily understand who has ever attempted to regulate a commutator under the body of the wagon among the heat, dirt and oil.

Hoffman Automobile & Mfg. Co., Cleveland, Ohio, show their "general utility" car, with its adjustable tonneau body. It has an 8 horsepower, single cylinder, horizontal motor, so constructed that the cylinder and cylinder head are cast in one piece, and the water chamber passes around the cylinder head, covering the valve mechanism and keeping both the cylinder and the valves cool. The valve mechanism is readily removed by taking away two nuts. The transmission gear is of the clash type, the speed being changed by means of a shifting gear which shifts from side to side. The slow speed is in the centre, and the high speed at one end of the case and the reverse speed at the other. The entire mechanism for all three speeds is operated by one clutch. When the operator desires to change the speed he shifts the clutch lever to the centre of the quadrant, which releases the clutch, the quadrant being fitted with a safety device which releases only when the main clutch is released. The speed case is mounted on a swinging shaft, which allows the mottom of the speed case to be moved forward or backward by means of a strut rod, which is fastened to the rear axle. Cooling water coils are placed in front of the body. Circulation pump of bronze is attached to the crank face and it is gear driven.

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The Ward Leonard Co., New York, show what is probably the most composite car in the show, that is to say, it is composed of more French ideas of different makers arranged together than any other car displayed. On a large tonneau body, which is mounted on an armored wood frame, is used a copy of the Buchet four-cylinder vertical 24 horsepower motor, which is cooled by the water circulation system known as the Thermo-syphon system. The gasolene supply is, of course, modelled on the Buchet system, which consists essentially of an extremely large supply pipe without any sharp elbows, thus being the full size of the pipe to the inlet port and getting a feed from both drives, so that the middle cylinders do not get any less than the end cylinders. This supply pipe being run around in a circle continually, the exhaust valve and plugs are on top of the cylinders. The side feed lubricator is used to each bearing by force pressure from the exhaust. The Renault change gear is used, in which the gears are moved into mesh, face on instead of edgewise, which takes away all chances of chipping the edge of the gears and also obviates the noise of the gears as they slide into the mesh. A notable feature is the small size and light weight of the gear boxes, three speed and reverse being furnished. The bevel pinion can be readily removed in a few minutes for the inspection of the back axle and gears by merely removing the four bolts. The brake is on the Rochet-Schneider plan, which has four copper shoes on a band, and when the brake is reversed it is impossible for it to touch on the drum when not in use. The factor of strength in the rear axle is increased three times over the Renault, in order to adapt it to the more rugged American conditions. Steering is by the usual inclined wheel, with control of the admission and the advance of the brake on the Renault system. These and the throttle control are by three levers placed on the steering pillar. The speed gears are made by big side levers, and an additional lever is furnished for a brake. The cone clutch is operated by a foot pedal and another foot pedal brake, which also opens the clutch. Roller bearings are used not only in the wheels but in the speed boxes. The body is of the King of Belgium type, a most extreme design, having a very graceful front hood, the body itself being made of hammered aluminum. A German Magneto is used which is a novelty in this country and which has been recently adapted by the Daimler and Panhard Co. This Magneto gives a jump spark even when turned at the slowest possible speed by hand, and by its use it becomes possible to dispense with the battery for starting. The action of this Magneto is as follows: As the shaft is turned, developing an electro motive force, the armature is short circuited by the platinum contacts until the circuit rises to its maximum amount, then the platinum contacts are separated suddenly by the cam. The interruption of the current by the platinum contacts causes the current to discharge into the primary of the special induction coil, the secondary of which supplies the spark plug. This gives an electrical effect while turning the crank at slow speed, which is equivalent to a sudden strong mechanical impulse. The price of this car is $5,000. A 16 horsepower two-cylinder motor, with perfectly balanced cranks set at 180 degrees, is shown in a car tonneau body, having the Limousine top, which is removable and has a glass front. A special patented four-speed gear is used in which the direct drive is upon the third speed.

Kirk Mfg. Co., Toledo, Ohio, show the Yale touring car, with detachable tonneau, having a wide rear door, an item worth remarking. The motor is of the double cylinder opposed type of 10 horsepower. Planetary transmission is used, handled by one lever. A novelty is the method of steering. A wheel is used, and the steering bar carries on its post a plain compound gear which works on an L shaped crank. The adjustment of the various valves are such that there is nothing to turn on or off when starting or stopping, excepting the operating levers. A rotary force pump is used in connection with the radiating coil. A new carburetter is furnished, but of which they decline to furnish details at present owing to some patent complications. The entire mechanism, with the exception of the wheels and rear axle, is lubricated by the McCahna hydrostatis system, which is positively driven and stops and starts with the engine. An electric switch key is provided, so that the car can be securely locked during the operator's absence. At the price—$1,750—the Yale is splendid value.

United States Long Distance Automobile Co., Jersey City, N. J., exhibit six complete vehicles, a complete chassis and a Standard Marine engine, built after their special design. The chassis attracted more than unusual attention and was hung in such manner as to be operated by electric motor, showing the complete operation of the driving mechanism and also the special arrangement and operation of the several engine parts. The chassis is of the angle iron type, supported upon half elliptics, both at the rear and forward. The engine is of the double cylinder 12 horse power upright type, and is in the bonnet and hung on an inner angle iron frame just in advance of the water tank. A simple arrangement of yoke and single bolt provides for the easy removal of the inlet and exhaust valves, both of which are mechanically operated. An ingenious governor consists of a weight pivoted to the flywheel and thrown outward against the effect of a dash pot, automatically varying the position of the collar on the main shaft and through link connections controls a throttle valve of the butterfly type. The ignition is hand adjusted. The governor also has a hand adjusted means for varying its operation and accelerating speed of the motor. Forced circulation is used with the centrifugal pump driven directly from the main shaft. The change gear mechanism is of the planetary type, giving three speeds forward and a reverse and controlled by a single lever and a foot pedal, the latter giving the reverse. On the high speed the drive is direct from the engine to the differential arranged upon a divided rear axle. An equalizing rod of unique construction is arranged between the case of the balance gear just overlying the main driving shaft and connected to a cross member of the frame near the change gear mechanism through double pivot connection. This construction provides a warpable frame which will flex only about the axis of the main driving shaft. A pedal operated regular brake of the expanding type operates upon the inside of the rear wheel drums, while the emergency brakes grip the outside of the same drum and are lever controlled. A very pretty equalizer for the pedal operated brake of simple construction provides ready adjustment for the brake, by merely taking up two lock nuts on the main brake lever. A unique oiler is used on this machine in which there is a disk having a series of pins, which disk is rotated by the engine and, during its rotation, picks up on its several pins a quantity of oil, which is wiped off into the tubes connected with the bearings. This insures positive feed of uniform quantity. A 12 horse power delivery wagon with two-cylinder engine, designed for R. H. Macy Co., was exhibited. This machine has been run on an average of eighty miles per day for over a month.

The General Automobile and Mfg. Co., Cleveland, Ohio—The General: A runabout with bonnet front having lockers; price $900; with detachable tonneau, $1,000; 8 horsepower; two cylinder opposed type of motor, 4x4½ stroke and bore; both valves are mechanically operated, being on the same cam shaft, and are readily removable; mechanical force feed lubricator; semi-elliptic springs front and rear; no reaches; artillery wheels with roller bearings and detachable tires; carburetter of mechanical valve type, with diaphragm adjustment, which when once set needs no further adjustment for all speeds under throttle; throttle control, which varies the compression from 15 to 125 pounds; planetary transmission; 200 mile tank capacity.

Century Motor Vehicle Co., Syracuse, N. Y., exhibit a gasolene car of entirely new design, which is driven by a 7 horse power single cylinder horizontally disposed motor, hung upon the I-beam fram and driving through chain to the balance gear of the rear axle. A planetary gear system is used in the transmission, giving two forward and two reverse speeds, all controlled by a single lever. The engine is controlled by a pedal operated throttle and pedal operated ignition device. Forced circulation is induced by a direct driven centrifugal pump. The gasolene and water tanks have a capacity respectively of fifteen and seven gallons, giving, it is claimed, a running capacity of 250 miles.

A specially designed carburetter is used provided with a float feed chamber and mixing chamber with an adjustable valve. It is connected through a throttle valve directly with the inlet valves of the engine. A unique arrangement of brakes is provided, of which there are two, arranged upon drums on opposite sides of the balance gear and operated in unison. An equalizing arrangement with improved adjustments secures proper simultaneous action of the brakes. A novel form of starting device is shown with crank arranged at the side of the seat and a chain and sprocket connection driving to the chain shaft. The sprocket upon the main shaft is normally unclutched, and a foot lever controls its position on a shaft. After the foot lever is depressed the sprocket member is clutched in and is then in position to turn over the engine shaft. As soon as the engine is turned over the sprocket is released, and thus insures the operator against back kicks. One-half inch ball bearings are used throughout, with wooden wheels and 3-inch detachable tires. A luggage box is provided in the box dash at the front, and the vehicle is specially designed as a light and low priced machine, unusually strong, and, although of light weight, making a very good touring machine.

Central Automobile Company, New York, distributing agents for Mors, Mercedes, Renaults and Peugeots, upholds the honors of Europe with an attractive exhibit including three cars, a two cylinder ten horse power carriage, and a four cylinder ten horse power touring car and a chassis of the 1903 eighteen horse power Mors car.

All these vehicles are so well known to the trade as distinctively foreign vehicles, that a detailed description is hardly necessary.

The particularly new features shown in the Mors chassis are the adoption of a me-

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chanically operated inlet valves upon one side of the cylinder in place of the suction valves formerly employed. A new honeycomb form of radiator is used, combined with a fan driven from the main engine shaft. A governor of the ball type driven directly from the cam shaft gives an automatic control of the engine and this may be corrected by hand adjusted means. A pedal operated accelerator is also provided for cutting out the governor and accelerating the speed of the engine. The regular pressure feed lubricator is used, its pressure being supplied by a shunt from the muffler. A new and very simple form of sliding gear is used, giving four speeds forward and a reverse, with a direct drive through a positive clutch on high speed. The several speeds are controlled by a single lever. The regular brake is on the drum of the countershaft, while the emergency acts on the drum of the rear sprockets. The latter are lever controlled, are of Mors pattern of double shoe type, and actuated by a backward pull on the lever in place of the forward movement which was formerly used. A unique feature of connection is shown for the spark plugs, and consists of an insulated bus bar running along the top of the cylinders, and have pivoted thereon the contact connectors, which may be forced down over the propecting end of the contact members of the igniter plugs.

F. B. Stearns Company, Cleveland, Ohio, exhibited two attractive cars of the tonneau type, very rakish and powerful appearing; one, a tw cylinder twenty-five horse power machine, and the other a single cylinder twelve horse power. The engine in the larger machine is of the double cylinder opposed horizontal type and has its shaft arranged transversely of the vehicle, and driving into a chain gear mechanism. This mechanism gives three forward speeds and one reverse with double lever mechanism and the differential of the dividend rear axle. Brass water tanks are used on the engine, and a forced circulation of water is induced by a centrifical pump frictionally driven by a fly wheel. The engine is governed by the throw of the inlet valves which are controlled by a wedge co-operating with the valve stems. A hinged adjustment may be used to set the valves for any predetermined speed up to forty miles per hour. Two carburetuers are used, one for each cylinder and each of the flost feed type. The exhaust and inlet valves may be easily removed by taking out two bolts. Forced feed is used on the oil of the lubricating system and is belt driven from the engine shaft. The gasolene tank, having capacity for 18 gallons, the water tank and the radiating coil are all located forward and under the bonnet. A novel form of contact device is used comprising two hinged contact members held towards the cam by a single spring and provided back of the cam with platinum contact pieces. As the hinged members drop off the cam, contact members are very forcibly brought together high speed a direct drive is secured to the differential of the rear axle with all idle gears out.

Haynes-Apperson Co., of Kokomo, Ind., makers, show their popular and well known cars, but with a great many changes in detail, among them being a new bonnet for locker use. The body lines have also been improved. Roller bearings are used in the transmission; in fact, every bearing in the whole vehicle is a roller bearing except the main bearings of the motor. The ends of the main shafts of the motor, however, are roller bearings. A new aluminum radiator is furnished, which consists of tubes and washers made of aluminum, the washers being slipped over the tubes. The radiator is rectangular in form, and has a hundred square feet of radiating surface. The ends of the radiator are also of aluminum in a box shape, and it is believed to be the only aluminum radiator in the show. Its weight is about thirty-three pounds. The clutch system of transmission is used, but they still continue to use the horizontal motor of 12 horsepower, of 5-inch bore, 6-inch stroke, and pin their faith to it as being the correct thing. The new steering rod consists of the usual steering post surmounted at the top by a wheel. Its novelty consists in the steering box, which is attached to a tube crossing the car a short distance below the floor line in such a manner that the steering box, which is attached to the steering post, rotates about this tube. By this construction the operator may push the wheel forward so that the steering post stands in a vertical position, or it may be drawn back to any desired position by the operator and fastened by means of a small toe latch at any angle desired. The steering post, just before piercing the floor, passed through a ball of brass, which rotates pivotally on pins piercing it at opposite sides. These pins are attached to a brass sliding plate, which moves backward and forward through a grooved brass guide, which insures the steering post a steady position at all times.

American Motor Carriage Company, of Cleveland, Ohio, exhibits two runabouts having some novel features. The engine is a horizontal type single cylinder, developing seven to eight horse power. This is located just under the seat, and through a transmission gear of the planetary type transmits through the chain and sprocket to a differential on the rear axle. The jump spark igniter is used and controlled by an automatic ball governor. The speed of the engine is controlled by a foot operated throttle, carbaretuers are of the float feed type. A gear pump mounted directly on the main shaft of the engine produces a forced circulation of water through a tank provided with radiating flues and also through a radiating coil. Two expanding brakes are used on the drum of the rear wheel, in addition the reverse lever may be used if desired, as an emergency brake. The car is extremely simple, having few parts, and is substantially constructed and gives a light touring car at a comparatively small cost. The brakes are controlled by flexible connections and have equalizing devices to avoid skiding. The battery controlling switch insures a proper contact under all conditions. A steel armored wood frame is used on the chassis with particularly long flat springs for giving easy riding qualities. The wheel base is unusually long, 96 inches, and helps add to the car's distinguished appearance.

Elmore Manufacturing Company, of Clyde, Ohio, have two fetching and splendidly simple cars, one with tonneau body, having a double cylinder engine of the vertical type, giving ten horse power, the other having a double cylinder vertical engine of six horse power, engine under the seat, the Elmore two cycle motor being used in each. The touring car is the latest product. It consists of a complete chassis with removable tonneau and hinged bonnet. The two cycle engine, the only one in the show, is almost certain to command increasing attention. It is valveless and a single carburetter of an improved float feet type bolted direct to the engine frame is easily controlled. The shaft of the engine extends transversely of the body, and drives through sprocket and the chain to the change gear mechanism, which is also located transversely of the body and is of the planetary gear type. Three speeds forward and reverse are secured through the manipulation of a single lever and the reverse may be used as an emergency brake. All pinions of a planetary system are mounted on roller bearings and unusually large clutch bands are used throughout. From a shaft of the planetary gear system the drive is through chain and sprocket, through the differential of a dividend rear axle, thoroughly trussed to give additional strength. An apple (?) igniter is used and forced circulation is secured by a belt gear pump. The chain gear mechanism it is claimed, need only be used in shifting gears for hill climbing, and under ordinary circumstances the high speed gear may be immediately thrown in and entire control of the vehicle secured by a throttle lever acting upon a throttle valve arranged in the carbaretuer and adopted to vary the volume of the charge passed to the cylinders. The runabout has the same type of engine with simply modified arrangements of part, necessitated by mounting the engine under the seat instead of under the bonnet as in the case of the tonneau.

K. A. Skinner, Boston, Mass., United States sole agent of the De-Dion, Bouton Co., has an unusually attractive exhibit of the excellent production of the famous De-Dion Company seven vehicles, comprising a rockaway, brougham, tonneau, surrey, phaeton. In addition to the above there are exhibited four or five De-Dion motors and a very compact gasolene driven isolated electric plant for use in charging batteries or for isolated lighting plants. The excellence of the De-Dion work on these motors needs no mention and is quite up to the standard so long maintained by the company. Of the vehicles the phaeton shows the latest design and is provided with canopy top and adjustable glass face plate, thoroughly protecting the operator when used in conjunction with drop side curtains. It is equipped with a two-cylinder water cooled motor, mounted under the bonnet and in very compact form. The De-Dion Company still adheres to hand adjustment for the throttle and igniter, and no automatic ball governors are used in connection with the engine controller. The regular De-Dion transmission system is used, with a special clutch, and has a double clutch in the new motor, which makes it possible to secure threee speeds forward and a reverse. All changes of speed are controlled by a single operating lever. All parts are standardized and made interchangeable.

The Motor Cycle Mfg. Co., Brockton, Mass., show the Marsh motor bicycle, so improved as to be barely recognizable. The size and power of the motor has been almost doubled; it is now rated at 3 horsepower and is made an integral part of the bicycle being incorporated where the crank hanger formerly existed; the cranks are now carried behind the bottom bracket joint. A flat belt, 1½ inches wide, a ball-bearing idler, a sight feed oiler and fuel tank of increased capacity are among the other improvements. The price of the machine, $125, is not the least interesting feature of the machine.

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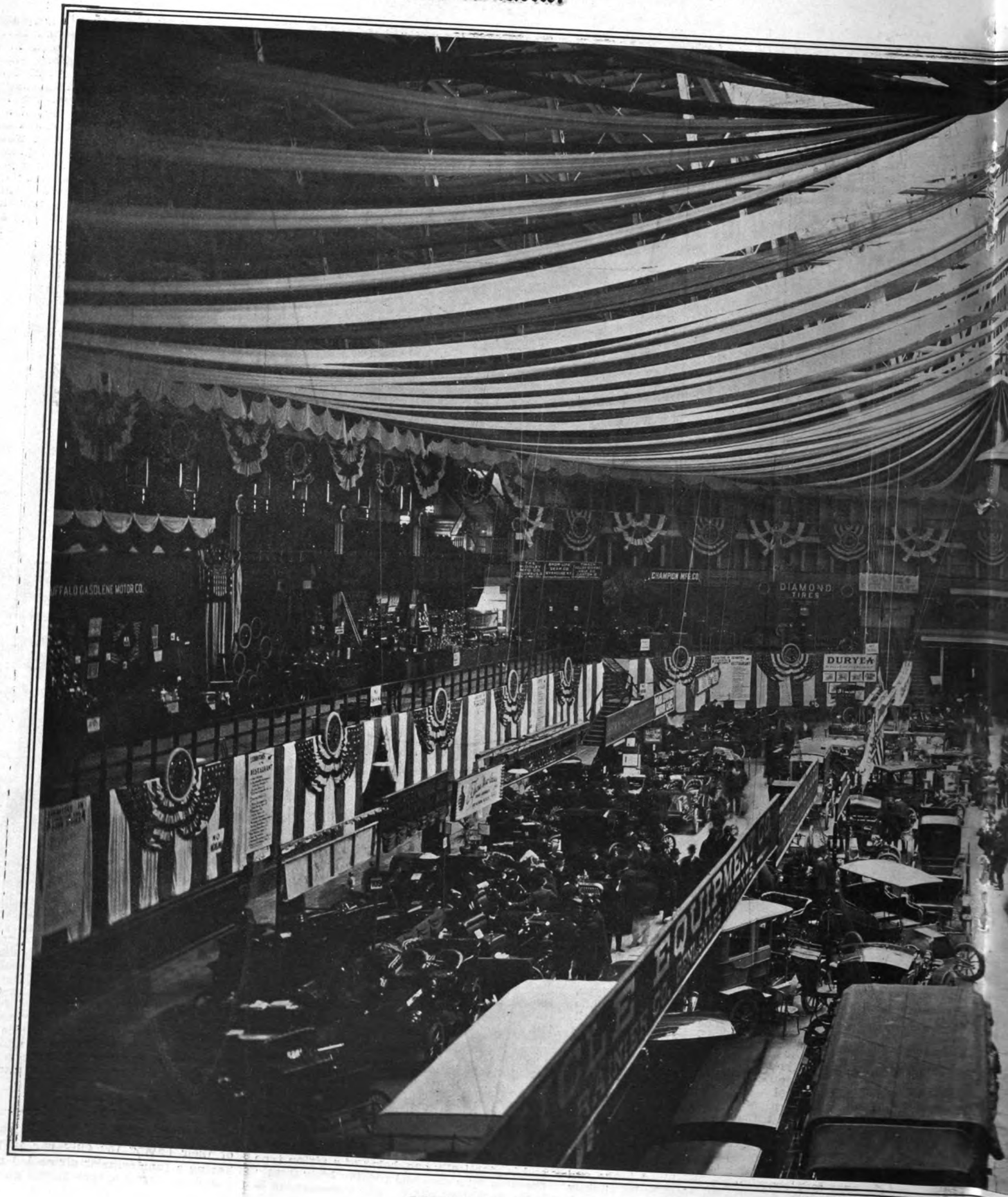
Byron V. Covert & Co., of Lockport, N. Y., show a little light gasoline single cylinder upright motor runabout which sells for $500, and which they call the Covert Motorette. It weighs less than 450 pounds and is made to carry two passengers. It has a tubular running gear and all the principal machinery, such as the motor, transmission gear, etc., is attached direct to the frame, so that the body is relieved of all vibration, the main frame being connected to the front axle with a swivel connection. Four full elliptical springs are used, made from Swedish steel, with single leaves of taper stock, and they look so light and small that the question is naturally asked whether they are strong or not. To this query Mr. Covert said that they never had one returned which was broken. The motor is a single cylinder type, water cooled. The whole construction, while light, is evidently of good material and well designed, and is one of the best $500 vehicles of the show. They also show another car called the Covert Chainless, costing $750, which has an angle iron frame with four semi-elliptical springs. The motor is of De Dion type, with water cooled single cylinder, and is placed transversely in front of the car under the bonnet. It has a 4¼ stroke, 3¾ bore, and 1,500 revolutions, and will give five horse power under brake test. Attached to the motor is an additional aluminum case containing a combined brake and clutch. By pressing the foot pedal slightly the clutch is disengaged from the flywheel, which is secured to the motor shaft, and by pressing the foot pedal still further a leather band on the clutch comes in contact with a drum acting as a brake. This affair is fitted with a spring which causes the clutch to return to its place immediately upon releasing the foot pedal. This spring also takes care of the end thrust of the connecting drive shaft. The cardan joint is fitted with ball bearings that reduces to a minimum the end thrust of the clutch. The change gear is the sliding gear pattern and is attached directly to the rear axle housing and drives direct on the high speed. A radiator is placed in front of the motor, which has been carefully tinned after being assembled, so as to prevent any leaky joints and rusting. A small push button in the floor of the body controls the reverse, so that it is an impossibility to throw on the reverse gear without first pressing this button.



Country Club Car Co., Boston, Mass., show the most original Yankee car in the show; certainly nothing in its construction is copied either from the German or the French. It has a double cylinder opposed 10 horsepower horizontal motor, 5-inch stroke and 5-inch bore, using a scavenging charge of air. The valve, or valves, is mechanically operated, and is practically one, being of a piston type operated by a cam and rocking lever from a short secondary shaft. The transmission is also peculiar and original, being of the planetary type, worked by compressed air taken from the motor cylinder and stored in a small receiver alongside of it. Three small cylinders in which pistons are operated by compressed air control the transmission gears, and these are located on the left hand side of the body directly behind and underneath the seat. On the left of and outside of the seat is a short crank lever which controls these small cylinders and pistons by a toothed segment, and any desired gear can be used and locked in the required notch and held in position until released. Three speeds forward and reverse are provided. All the mechanism is inclosed in a body, and therefore dust proof and easy of access, so that there is never any need of going under the body. The water radiator cooler is in front, and is operated by a centrifugal pump, which is worked by a friction disk on a flywheel. The sides of the body form the water tank. The ignition is by make and break, and the oil is fed mechanically by a ratchet working from the motor, which turns a nut on a screw and forces a plunger through the oil receiver. The car weighs 1,400 pounds and costs $1,200.

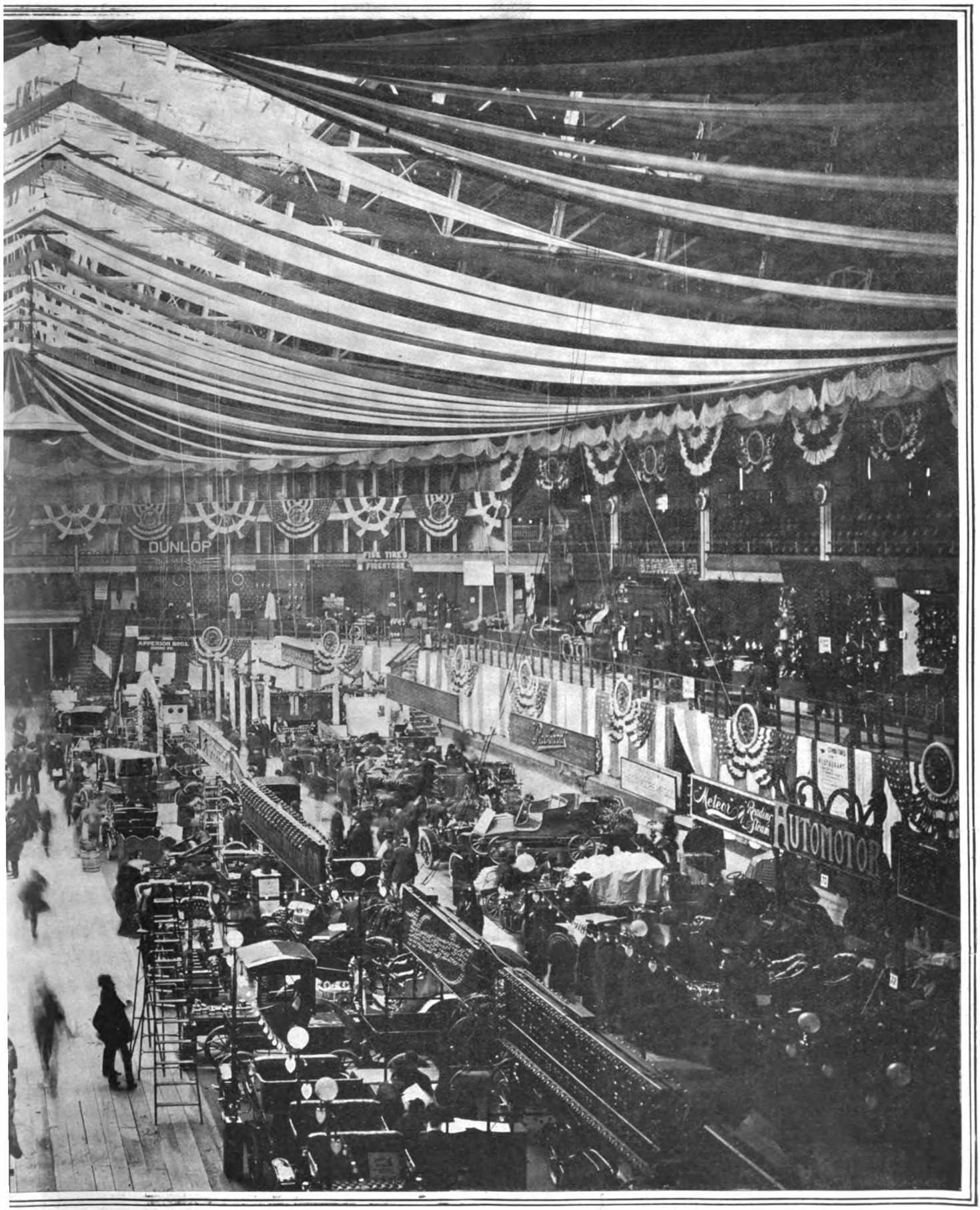
H. H. Franklin Mfg. Co., Syracuse, N. Y., are attracting a deal of attention because of their having the only car in the show having a four cylinder air cooled motor. A complete chassis is shown, and also two fin-

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GENERAL VIEW OF THE SHOW IN MADISON SQUARE GARDE

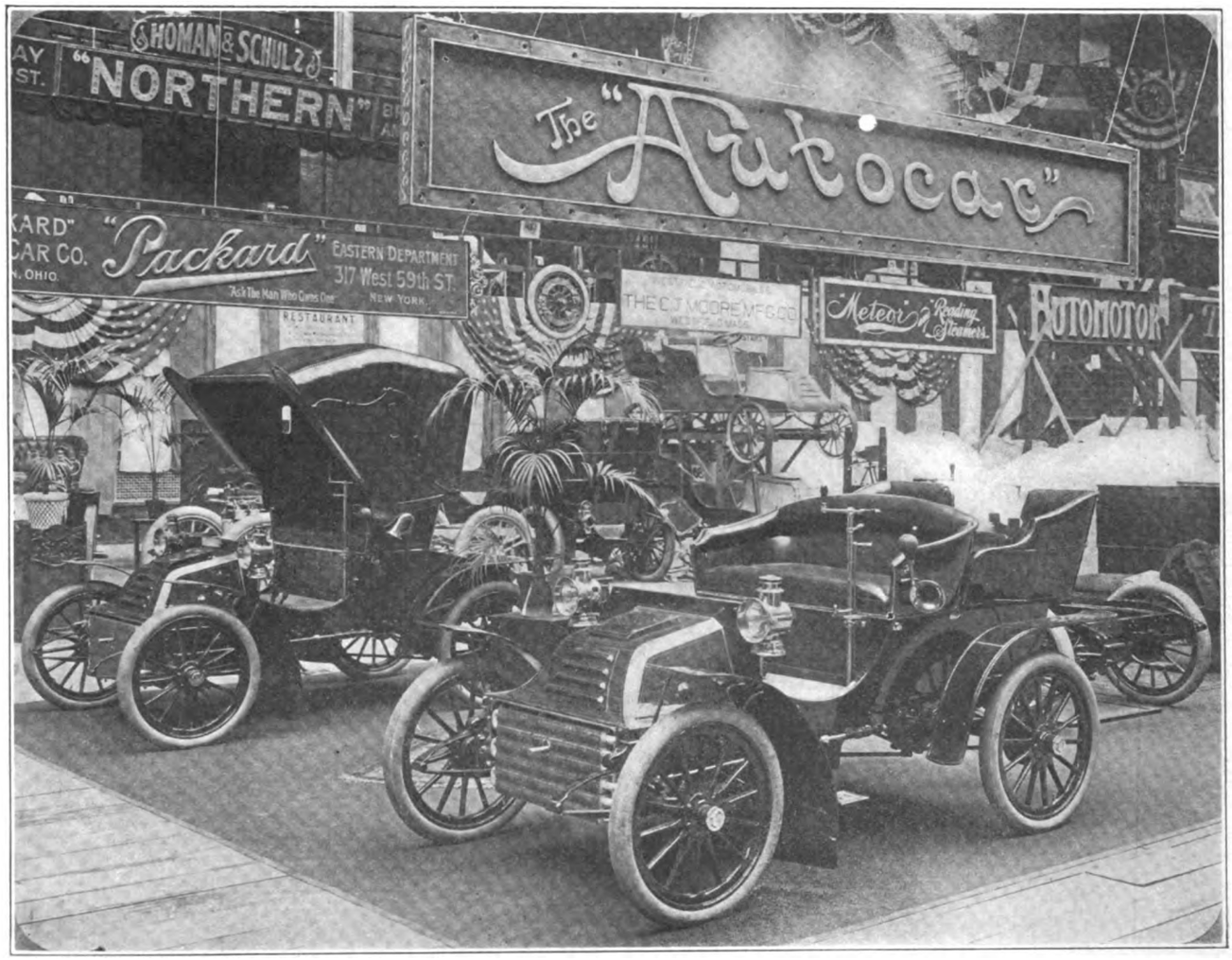
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DEN LOOKING FROM THE FOURTH AVENUE GALLERY.

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ished cars. The body, which carries a regulation bonnet in the front, although single seated, has divided seats with rounded backs, giving a peculiar tonneau effect to the single seated body. The frame is of angle iron with wood reinforcements, and is carried on four full elliptical springs. The motor, as has already been mentioned, is a four cylinder air cooled, of the vertical type, but the cylinders are not arranged in pairs, all four being carried in a straight line laterally across the front. Both the inlet and the exhaust valves are on the top, or head, of the cylinder, and both are readily detachable by removing two bolts. The oil is fed from a large reservoir, which carries about three quarts of oil, to a smaller reservoir connected with a pump which is driven by an eccentric from the motor, so that the supply of oil is regulated by the speed of the motor. The ignition is by a dynamo operated by a cone friction drive on the flywheel and controlled by a governor. As an auxiliary a storage battery is used, which is charged from the dynamo by using the excess of current generated. The crank shaft differs from the ordinary crank shaft of the four cylinder construction by having five bearing points instead of three. The transmission is of the planetary, or epicyclic, type, without any bolts, the five little pinions tending to take the strain off. A long chain drive is used to the rear axle, and the popular fad of driving direct on the high speed is used, of course. The spur gear differential is made specially for this wagon by the Brown-Rize Co. In the motor a very heavy connecting rod is used, having large bosses and flanged edges or grooved sides to add strength to it and to carry oil to the bearings. A square, hollow casting containing four inlet pipes is bolted to the cylinders, and a large brass pipe enters this casting in the centre from the mixer, so that the middle cylinders get as large a supply of gasolene as the end ones do, there being no loops or joints to interfere with the rapid passage of the gas. The throttle to the gasolene supply pipe is on the wheel steering pillar, as is also the spark advancer, which consists of a gear driven shaft having four cams, and which actuate springs for each wire connection, and on the end of this shaft is a combination fibre and brass disk, having two contacting points, which produce a make and break spark. It is one of the most ingenious spark advancers in the show. Two brakes are provided, one on the differential and one on the transmission. The car weighs about 1,100 pounds and costs $1,300. It certainly is a high powered car for two passengers, being immeasurably more powerful than many of the tonneaus shown.



Apperson Bros. Co., Kokomo, Ind., show a 24 horse power touring car with a horizontal motor of the double cylinder opposed type. Each cylinder is located on the opposite sides of a central crank chamber and one vaporizer is used on each cylinder, both being controlled by one lever which is operated by a foot pedal. The speed of the motor can be regulated in this way from 200 to 1,200 revolutions per minute, and as readily responds to the throttle as a steam engine does. An ingenious system of water circulation is employed, using a pump which is gear driven. The water flows to the pump by gravity and then is forced from the radiating coils. For ignition a magneto is used, supplemented by a storage battery of large capacity, using the advance spark system, with a make and break contact. The lubrication is by a powerful mechanical force feed pump, mechanically operated, which has ten feed pipes. The speed controlling gears are of the shaft gear type, and the four speeds are controlled by one lever. One flywheel clutch of the taper cone pattern drives the car and is thrown out of gear at all times except when the car is in operation.

Hall Motor Vehicle Co., of Dover, N. J., show a handsomely finished tonneau car mounted on a reinforced wooden frame with the popular half-elliptical springs, with body irons in front and rear. A horizontal double cylinder opposed motor is in the rear of the car, cooled by a rotary pump with a radiator in the front under the hood. The cylinders are 6x6 inches, of 20 horsepower at 1,000 revolutions. A make and break spark is used, operated by a spring actuated rod working on the secondary cam shaft. In operation this rod is positive in its action, and is not affected by the oil and is very effective even at a very low speed. A system of direct spur gearing is used for transmission, the pinions being on the main shaft or sleeve of the motor, having an intermediate spur gear between that and the spur gear on the rear axle, the differential being car-

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ried inside the larger spur gear on the differential; the speed gears are of the planetary system, so that it will be readily seen that the object of placing the motor in the rear of the body and over the rear axle is to provide a close connection between the main shaft of the motor and the rear axle of the system of spur gearing employed. Mr. Hall says that while this system of spur gearing is new to the shows, his experimental carriage has been run on the roads of New Jersey for two years with great success. It is also to be noted that the rear part of the motor rests firmly on the rear axle, and the front part of it is carried to a cross sill on the main frame. A disk containing a suitable number of holes is placed over the engine, and oil feed pipes lead from them to various oil ports, and the oil is pumped mechanically to a tank covering the holes in this disk, the pump being connected with the rear axle so that when the car stops the oil ceases from flowing, and so is not wasted. The spark is advanced by a foot pedal. All the controls are operated from the seat, and the foot brake operates on the rear wheels. A foot button on the right side of the car advances the spark, the object of this being to avoid danger in starting the engine, the foot button always being in normal position for starting when the engine is on centre. The price of the car is $5,000.

E. R. Thomas Motor Co., Buffalo, N. Y.—A new tonneau at $1,400; 8 horsepower; single cylinder; having four piston rings grounds to one-thousandth-inch, with mechanically operated valves, both operated by one cam. French system of slide transmission without bevel gears; three speeds forward, one reverse; pressure oil lubrication; one lever control; steel frame tapered, reinforced with angle iron; aluminum fenders; a foot lever disengaging the power, and when the brake is applied the motor also runs free; detachable sprocket for racing on hilly countries; a new mixer of constant level type, changing both the air and gas at the will of the operator; any quality of gasolene can be used in any weather; artillery wheels with roller bearings and detachable tires; spark and throttle control on steering rod; lubricating pump geared to the motor; rear axle trussed in front and underneath; double acting brake. Body of London smoke color, with tufted leather upholstery of best quality of hair and springs. The whole construction is substantial and of great simplicity; a complete chassis is shown; also the well known Thomas motor bicycle, incorporating three great improvements—the spring truss fork, hygienic cushion frame and combination leather and steel chain belt that gives the elastic qualities of a belt with the unstretchable nature of a chain. The belt is a round twisted one of one-half-inch diameter, into the hollow core of which is drawn a block chain about one-eighth inch in size. It looks as if the question of belt or chain drive was solved by this combination, and that the rigidness of the chain can in this way be overcome by the yielding nature of the belt.

Northern Mfg. Co., Detroit, Mich.—The Northern, exhibited by Homan & Schulz, New York City. A runabout at $800; single cylinder; 5 horse-power; both valves mechanically operated from one cam shaft; starts from seat with one turn of starting handle; new design of carburetter under throttle control; planetary transmission, with 1¼ face bronze and steel gears to prevent slipping; large side springs, with elliptic part spring; the body is hung on a balanced swivel so that the vibration and dip of body from the motor is not imparted to the body, as in other forms of side spring construction; artillery wooden wheels with ball bearings and detachable tires.

Foster Automobile Co., Rochester, N. Y.—The Foster, a light gasolene touring tonneau at the low price of $1,400; a departure for this concern, which heretofore has made steamers only. It has a 9 horsepower upright, two cylinder, water cooled motor, under front bonnet; all parts of motor and gear cases oiled from central oiler; ignition by jump spark system; two speeds ahead and a reverse; clutch is inclosed with compensating gear in oiltight case; artillery wheels, detachable tires; long wheel base; platform springs; wheel steer; bevel gear shaft drives; tonneau body complete with fenders, baskets, horn, three lamps, brass trimmings; weight, 1,100 pounds; also show a combnation light roadster steam wagon for two or four passengers, with detachable front seat, which, when detached, has a bonnet front; reachless running gear, which gives low centre of gravity; platform springs, with artillery wood wheels, ball densing coils in front; new 6 horsepower engine; fuel capacity of thirteen gallons for 175 miles; water capacity eighteen gallons for two days' use with condenser; platform springs with artillery wood wheels, ball bearing and detachable tires; flaring fenders; black body with red running gear. There is also shown a substantial steam delivery wagon.

Sidney B. Bowman, New York, shows three cars, a Thomas tonneau, a Panhard and a model of the new La France touring car, built by La France Fire Engine Co., of Elmira, N. Y., which is of the medium touring type. The upper part of the body is of aluminum, the base of wood and having a set of continuous wooden fenders over both wheels. The body of the tonneau style is the product of J. M. Quimby & Co., of Newark. The frame is of the armored type, with wooden sills having broad steel plate reinforcements, very broad in the middle and tapering at both ends similar to the familiar bridge type of construction. The front axle is solid and curved and fitted with half elliptic springs, which are hung to the body irons, as are also the rear springs; the rear axles are solid and of a square section. Wooden artillery wheels, fitted with 36x3½-inch detachable tires, are used. The motor is of the four cylinder vertical type, 20 horsepower, with induction and exhaust valves that are both mechanically operated by separate cam shafts driven by gear wheels on the main shaft. A three tier, double coil, four row radiator is in front of the frame between the projecting front spring ends. The ignition is by dynamo and storage cells, which are fed by the dynamo, so that there is no danger of these being fully discharged at any time. The motor is lubricated by a liquid oil gravity feed. The transmission gears are oiled by solid Albany grease feed from a cup and valve operated manually. The water circulation is fed by a pump attached to the motor by a gear wheel. A numbered pressure gauge with a needle on the dash shows by its position and fluctuation how fast the engine is running by the pressure of the water on the gauge. Four speeds forward and one reverse are controlled by one lever at the right of the operator. Another lever being for the emergency brake, a foot lever brake is also attached, and a foot lever is supplied to throw the clutch out of gear, and when either brake lever is applied the clutch is thrown out of gear. There are three two toothed sectors on the steering pillar underneath the steering wheel, to which three short toothed handles are attached. One controls the gas, another the spark and the third one the air. The bevel drive is to a differential countershaft, and from there by a double chain drive to the driving wheels.

The Buckmobile Co., Utica, N. Y., as its name implies, has a buckboard car. A pair of flat wooden reaches about six inches wide and one and one-half inches thick run from the front axle to the top of the truss on the rear axle. A pair of wooden sills cross these wooden reaches about fifteen inches from each axle, and extend about three inches on each side of the broad reaches. These sills are fastened on each side to long leave springs on the automobile style, and on top of these the body rests. The front axle is solid, and the rear axle is live with a differential spur gear. The body is ash, with recessed veneered panels of curly whitewood, the dash being made of the same material. A double cylinder vertical motor of 10 horsepower is carried under the seat. The drive is direct on the high speede. The car weighs about 900 pounds. The wheels are of the wooden artillery type, fitted with detachable tires. Two brakes are furnished, one on the rear axle differential and the other on the transmission. Lever starting is employed from the centre pillar.

The Standard Automobile Company, of New York, show the Decauville (French) cars, giving respectively ten and twenty horse power; one, a two cylinder and the other a four cylinder, both of the tonneau type. A new feature of this year is the automatic governing by a centrifical governor, which throttles the amount of mixture passed to the cylinders. The speed of the vehicle is controlled entirely by the adjustment of the spark, which is hand controlled. Another feature is the use of a dynamo igniter combined with a storage battery, and provided with an automatic cut-out and cut-in which assures full charge of the battery. This is used until the machine has obtained a speed sufficient for generating the necessary current for the igniting generator system. Sliding gear transmission is used with the direct drive of the third speed. A new feature of the twenty horse power car is a double rear axle conctruction. The inner or main shaft of which may be removed without disturbing the wheel adjustments or outer tube which extends from both sides of the casing of the differential gear. New springs have also been adopted over the rear axle of the half platform type, giving easier riding qualities.

The Walter car, New York, attracts some little attention and disclosed several novel features. Three complete cars are shown, one a four-cylinder and the others having two cylinders. One of the features of the machine is a chassis frame of tubular construction, supported on half platform springs at the rear and half elliptics forward. This frame forms a positive support for the engine and all driving mechanism. The engines of special design are secured to the frame and a direct drive with universal couplings is provided between the change gear case and divided rear axle. Sliding gear transmission is used, giving three speeds forward and one reverse, all controlled by a single lever. A novel arrangement of clutch is used, comprising a main clutch member of conical form co-operating with a conically shaped co-operating member, secured to the rear of the fly-wheel. A depression of the clutch pedal drives the movable member of the clutch forward to-

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ward the fly-wheel to release it. The engine is governed by a centrifugal governor, operating directly on the throttle. Either mechanically operated or poppet inlet valves are provided. In addition to the automatic throttle governor, there is a hand adjustment for varying the amount of gas passed to the engine. This does not affect the action of the governor. The carbureter is of the float feed type, with usual adjustments, and the water circulation is induced by a frictionally driven centrifugal pump, hinged to the tubular frame and spring pressed against the fly-wheel. Two brakes, pedal operated, one acting directly upon a drum upon the main driving shaft and the emergency brake acting upon the brake drums of the rear wheels. The emergency brake is interconnected with the clutch and insures throwing it upon application of the brakes.

Cleveland Automobile Co., Cleveland, Ohio, shows two tonneaus, one surrey and two runabouts. One of the tonneaus has a detachable body with a false back. The other one has side doors, but the step is too high except for a giant. They have also a complete chassis showing their single cylinder construction, and another complete chassis containing half the front part of a body, with a two cylinder horizontal type of opposed motor, with a 5-inch bore, 6-inch stroke and of 16 horsepower. The oiling is done from the exhaust and is operated by a large cam. The carburetter is jacketed and heated by the exhaust. When the brake is thrown on the clutch is thrown out, which now appears to be very common and a good practice.

The Loomis Automobile Co., Westfield, Mass., display a big touring car with detachable tonneau. A powerful two-cylinder upright motor is used, having thirty-two square inches of piston area cooled by a forced system of water circulation passing through a number of ⅞ tubes, forming a radiator. The water is always above the cylinder and the radiator below, hence no vacuum can be formed. The transmission is by an individual clutch system, so that any gear can be picked up without checking and without passing through any other gears. Three speeds forward and one reverse are provided, all accomplished with one lever to which is attached a hand latch which locks itself, so that no mistake can be made in using the gear. The control of the motor is by a throttle and sparking device, and is without a vibrator. It is claimed that no adjustment of it is ever needed, as it has a rolling contact like a trolley on a trolley wire, and having only a primary circuit there is no danger of a short circuit. In fact this trolley is kept covered with oil, as it operates better with oil than without it.

Knox Automobile Co., of Springfield, Mass., show a chassis without wheels, standing on end, so that the motor is vertical, with the crank case cover removed and a hand crank attached, so that its operation may be readily noted. Its new features this year consist of a larger cylinder, one inch having been added to the bore, the stroke remaining the same. The belt driven pinion is somewhat smaller and its shape has been somewhat altered. The weight of the whole car has been increased about 200 pounds. A new disk clutch for high speed has been furnished, and twenty-four inches of tubing has been added to the muffler, making three tubes instead of two, as last year. Another important change is the employment of wooden artillery wheels in place of the direct spoke wire wheels that were formerly used.

The Spaulding Automobile and Motor Co., of Buffalo, N. Y., show, in addition to their runabout, a touring car of 25 horse power, with double cylinder vertical motor in front in a brass bonnet. The extreme novelty is the method of starting the motor from the seat. By pressing an electric push button on the dash a spark is produced which starts the motor without any preliminary cranking, a charge being retained in the cylinder under atmospheric pressure, it being necessary, of course, to leave the motor in a certain pre-determined position to permit of this. The controlling system is also different from any other car in the show, being actuated by a crank lever on top of and working through a fixed upright or stanchion in the centre of the car and intended to be operated by the left hand of the operator. The usual wheel steering device being to the right of it, it having a hinged steering pillar for easy access to the seat; a clash system of transmission gears is used with a direct drive on the high speed and a double chain drive with plain bearings at rear axle. The foot brake also acts on the transmission.

O. H. Keep, New York, shows the Fiat, an Italian car, one of the main features of which is the transmission system, the gears always being in mesh and controlled by one lever giving three speeds forward and a reverse. The gears are perfectly noiseless, and after their long use show no signs of wear. The motor is a four cylinder upright, with 16 horsepower, having a double chain drive to the rear wheels. A make and break spark is used, furnished by a magneto, and the spark is advanced by a governor on the main shaft, which varies it according to the speed of the motor. A combined cooler and water tank, composed of a nest of small tubes giving a very minimum water surface with a maximum air cooling surface, is used, and which are additionally cooled by a fan behind it which is driven off the main shaft. The oil feed is by water pressure, which goes to the oil tank, causing it to overflow and fill the supply pipes. If the oil should cease to flow a sight feed on the dash indicates it to the operator, and he knows at once that the water is not moving and requires his attention. A square front bonnet of the Mercedes shape is used with this cooler and fan.

Kensington Automobile Mfg. Co., Buffalo, N. Y., has a tonneal with a 12 H. P. Kelecom double cylinder vertical motor, having double opposed vertical cylinders of 4-inch bore and 4-inch stroke. The motor is fitted with a balance wheel, the interior rim of which is cone shaped. A leather covered pulley fits into this rim, forming a clutch, which is released by a foot pedal. A shield prevents the oil from entering the clutch and causing it to slip. The clutch connects with the transmission shaft, being fitted with three stationary gears of different diameter, which mesh with three sliding gears, also of different diameter, upon a parallel shaft connecting with a flexible shaft. The shaft drive is of the compensating, bevelled gear make on a live axle. All the gears are fitted with ball bearings. The radiator has sixteen copper coils, with copper disks, and a rotary pump connected with the motor shaft to keep the water in circulation.

H. Barthol Brasier, Philadelphia, Pa., exhibits one car of rather attractive design equipped with a tonneau body with canopy top with enclosing curtains, with adjustable glass front guard. The engine is two cylinder type, 15 horse power. A unique feature of control is shown including a water pressure operated throttling valve. The circulating pump which is of the direct drive gear type, creates under varying speed different pressures which, acting upon a diaphragm, controls the pressure of the throttle. Its lever is arranged over the steering pillow and controls a bye-pass, which, of course, varies the pressure. The ignition is governed entirely by hand. The change gear mechanism giving three speeds forward and one reverse is controlled by a single lever. The gears are always enmeshed, and several sets are thrown into or out of commission by shifting clutches. The igniter lever is inter-connected with the main oil supply, thus insuring the oil being turned on and off as the vehicle is started and stopped. Just back of the main gear shaft is a ratchet wheel, and instead of using a sprag to prevent retrograde movement of the machine, a pawl is dropped into this ratchet absolutely locking the driving mechanism.

Smith & Mabley, New York, manufacturers of the American C. G. V. and importers of Panhards, Mors, Renaults and Mercedes, have, as usual, a very attractive exhibit on the main floor, including the foreign made machines, together with the American C. G. V.; in all some twelve vehicles are shown, including one complete chassis of the C. G. V. type. It is unnecessary to say that the foreign built machines are all elegant in every appointment and quite up to the standard so long maintained by the foreign builders.

Sandusky Automobile Co., Sandusky, O., a newcomer, shows a new light gasoline runabout, having a piano box body, with a rounded bonnet front on top of the dash. It weighs about 600 lbs. and has a horizontal single cylinder motor of 4 horsepower. The water circulation is of the natural type, without pump, the tank being elevated; the water is fed by gravity to the top of the motor and returns to the tank by another pipe from underneath the motor, and when the car is at rest the circulation is reversed, which prevents it from freezing. It has a double chain transmission drive without gears, it being claimed for this system that should a chain break it is easily repaired, whereas a gear which is once stripped requires a new one in its place. The gasolene control is by a foot push button, and there is also an exhaust cut out. The body is mounted on long leaf side springs, resting on sills wholely outside the body, which gives a low centre of gravity.

Whitney Automobile Co., Whitney Point, N. Y., has a runabout with a single horizontal water cooled motor of 6 horsepower, using a "make and break" spark, governed by a foot lever changing time of ignition. The motor and all other mechanism are attached to a set frame, which is put together with hot rivets. The transmission gears are in two cases around the main shaft of the motor, and of the friction clutch type; when the high speed is thrown in all of the gears are out of use and the power is transmitted directly from the main shaft. The muffler has a cut out valve that is operated by the foot pedal. The cooling system consists of a large radiating coil, with a rotary circulating pump driven by chain transmission from the main shaft of the motor. The carburetter is of the float feed style, and has a sight feed, so the quality of the mixture can be easily seen and is controlled by a lever operated from the seat. The rear axle has a roller bearing under each back spring; also a roller bearing near the middle of rear axle attached to the strut rod, which relieves the strain from the driving chain.

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American Georges Richards Co., represented by Barry & Hayes, New York, have an attractive display of three vehicles, a 24, a 10 and a 12 horse power. In addition to these two vehicles, they exhibited W. K. Vanderbilt Jr.'s Renault racer of 26 horse power. The particularly new features of the Richards is the adoption of the magneto generator system for the ignition in place of the old battery system. The same driving shaft operating the magneto actuates a mechanical lubricator. The engine is governed by a throttle, either by automatic governor on the Morse plan or by a hand operated lever. The ignition is hand adjusted. Improved grip detents are provided on brakes and change gear levers.

Duryea Power Co., Reading, Pa., is again showing its three wheeled runabout with Duryea's famous three cylinder vertical motor and single hand control. No changes have been made in the general appearance and detail of the carriage, excepting that new and improved springs have been added, and an automatic spark advancer, which is run from the cam shaft which operates a governor that varies the speed, making it particularly easy for starting. The motor has a new connecting rod which is flanged or grooved so as to catch the oil and economize in its use. Duryea still uses the hammer break spark with a naked wire, having, however, a new brass double spring clip for fastening the wire to the plug without a nut, and is readily detachable, and which, since Duryea has brought it out, has been adopted by Mors, of Paris.

Warwick Cycle & Automobile Co., of Springfield, Mass., exhibit their Warwick cars, which are very similar to their product of last year, save that wooden artillery wheels replace the wire wheels and a longer wheel base is provided. Larger and more comfortable seats are used, and the details of the centre pillar steering have been improved, the motor is now hung on springs instead of on the running gear; a larger and stronger chain is used. A Warwick motor bicycle, a chainless, is also shown.

Henri Fournier, Paris, France, displays a big 60 horsepower Mors, which is ticketed as having been sold to William R. Hearst. A Mors magneto, driven by spur gear from a dynamo, is shown in open section so that the operation of the sparking may be seen. An ingenious method of making contact between the wire and plug is shown by a forked prong end system of contact.

Mechaley Bros., Stamford, Conn., show an assembled car using a Brennan double cylinder opposed motor of 12 horsepower and the Champion differential spur gear. It weighs 1,450 pounds and costs $1,500.

Motors

That mechanically operated valves are novel, or confined to foreign motor practice, is an assertion the fallacy of which is easily proved by an examination of a number of American-built motors. Of the concerns showing motors alone, four, the Buffalo, the Rutauber, the Conger and the Auto-Supply Co., all use such valves. No especial virtue is claimed for this practice, beyond the fact that it is thoroughly mechanical, and novelty is about the last thing thought of. The Conger people, for example, have used it for three years.

It was formerly said that American motors were much inferior to those of foreign manufacture. Such impeachment no longer holds. There are motors at the show that in workmanship, as well as design, are marvels. All crudity has disappeared. The product is highly finished and thoroughly efficient. If foreign motors are selected it is for reasons other than the inability to secure good ones of home manufacture.

Seven motors in all are shown separate from cars—the four already mentioned and the Brennan, the Kelecom and the De Dion, the last two being, of course, of Belgian and French make. Of these the Brennan, the Rutenber and the Conger are furnished in both the vertical and horizontal forms. The remainder are shown only as vertical engines.

Buffalo Gasolene Motor Co., Buffalo, N. Y.—The specialty for the coming season is what is termed the Tonneau Motor, a four-cylinder, vertical water cooled 8 H. P. engine of fine appearance and containing a number of excellent features. Chief among these are mechanically operated inlet valves. All motors are equipped with metal enclosed bases, with sufficiently large detachable panels so that access to all adjustments are easy. The valves are solid steel forged, accurately ground. There are five heavy bearings in base of motor, assuring firm journals for crank shaft. These bearing caps are all held in proper place by double lock nuts and split keys, consequently there will be no trouble of lost nuts and loose bearings. There is no packing excepting under the water jacket plate, and with this there is no trouble, as there is no pressure to blow it out. The sparker plugs on top of motors all have a double seated ground point, absolutely compression tight. The cams operating inlet and outlet valves are all on one shaft, and they are pinned on the shaft, assuring positiveness in opening the valve at absolutely the right time. Just above the valves, in center, are valve plugs. Should any valve leak, it can be taken out in thirty seconds, reground and replaced and ready to run in two minutes. All the four cylinders are fed with one vaporizer through one inlet casting. The cylinders are 3 7-16 x 5 inches, and the motor runs at a normal speed of 700 R. P. M.

Conger Mfg. Co., Groton, N. Y.—Stolz gasolene motors. Both from the wide range of patterns and the abundant evidences of fine workworkmanship and finish, this exhibit is notable. The vertical motors are made with one, two, three and four cylinders, and the horizontal with one and two, the latter of the well-known opposed type. The cylinder dimensions are 4 x 4 and 4½ x 4½ inches, either size being given, while the single cylinder horizontal motor is 4¾x6 inches.

Mechanically operated intake valves, or non-automatic, as it is termed, are employed, both actuated by cams mounted on the secondary shaft. The sparking device comprises unique and practical electrical principles involving "jump-spark," or "make and break," system employing commutator, and transmitting current in two distinct and separate directions, making ignition assurance doubly sure. This method positively avoids failure to properly charge cylinder and exert proportionate energy at each impise. The valve must unseat no matter how otherswise influenced. No failure of explosions is liable, owing to double point of contact closing circuit that sends sparks to ignition chamber from two sources simultaneously.

Brennan Mfg. Co., Syracuse, N. Y.—Brennan standard gasolene motors. Of these motors their makers frankly say that the horizontal type is the favored one; a double cylinder vertical motor has been added, however. The regulation motor is of the double cylinder opposed type, water jacketed, having cylinders with double thrown cranks 180° apart. The pistons are on a horizontal line on opposite side of shaft. The rods being on separate cranks, balance the reciprocating parts, giving an impulse alternatedly one per revolution, entirely eliminating vibration.

The valve chamber, cylinder head and cylinders are cast integral and are full water jacketed, being in one piece there are no joints to leak water or compression.

To facilitate inspection, the top of the case can be removed without disturbing any of the adjustments, giving full access to the crank case for inspection or adjustment of parts. The crank shaft rods, and pistons, can be lifted out if desired. The case is dust proof and oil tight. There are no joints in the bottom part of the case for the oil to leak out.

Charles E. Miller, New York—Exhibits the Rutenber motor, made by the Western Motor Co., Logansport, Ind. The principal models are the 2 and 4 cylinder, vertical water cooled motors, althought a 4-cylinder air cooled is also carried. Mechanically operated intake valves mark these motors. By their use a full charge at each suction and full exhaust of the charge at its proper interval is secured, and no valves ever stick to prevent the proper action of the motor.

The valve boxes are so constructed that all valves may be easily removed or reground to their seats without disconnecting any of the parts of the motor.

K. A. Skinner, Boston, Mass.—De Dion-Bouton Motors. The product of the famous French house, the apostle of high speede vertical motors, is shown in a variety of styles, ranging from the 1 to 15 horsepower. Up to and including 9 horsepower, the motors are single cylinder; the 12 and 15 H. P. sizes have two cylinders. The changes are mainly in detail, a quickly detachable commutator plate and a small button shaped valve on top of the intake valve taking the place of the compression tap formerly used.

A. H. Funke, New York.—Kelecom Belgian vertical motors. Although used in this country for less than a year, these motors have made an enviable name and are being used on a number of well-known cars. The sizes imported range from 1¾ to 11 horsepower, those from 5 H. P. up being water cooled, and the 9 and 11 H. P. sizes having two cylinders.

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Electricity

That the electric vehicle is no passing fancy and is an art in vehicle construction which is here to stay and grow to unusual proportions is amply indicated by this year's show.

While no very radical departures have been made in the bringing out of particularly novel apparatus for the electric vehicle, the show in both heavy and light electrics is better perhaps than ever before. The general advance movement seems to be toward simplicity, increased capacity of operation, and as low weights as are consistent with good practice.



The lighter vehicles of the runabout type are adopting ball bearings both in motor equipment and for the wheels. On these vehicles the body suspension of motor with chain drive is the most popular. The efficiency of motors has been greatly increased, but this, of course, is due to the advances made by engineers in adapting well known types of motors to vehicle uses. The number of poles on the motors have been increased, and where originally the two-brush motor appeared the four and even six-pole motor is now being adopted.

The underslung battery is, of course, popular and proper on the heavy vehicles, with individual motor drive direct on the rear wheels. In one instance, however, that of the light runabout of the Electric Vehicle Co., a divided underslung battery is used, with the motor hung between the two battery sections. In this carriage the reachless frame is used, with side spring body suspension. The Studebaker Co. have this year been added to the list of electric vehicle manufacturers, and show a reachless frame, having a flexible tubular construction bearing all weights and supported over the springs. The electric brake is becoming more popular, and the controllers are much simplified. The Westinghouse Electric Mfg. Co. appear this year with standardized parts, and will materially aid the growth and popularity of the electric vehicle.

For heavy truck work the electrics are more popular than any other type, and the growth in this direction is undoubtedly stimulated by the ease of operation, which permits the use of ordinarily skilled operators. The electric was, of course, one of the earliest vehicles in the field, and naturally the commercial world looked first to it for the solution of the transportation proposition. In this field it certainly is not only holding its own, but growing to unusual proportions. It is a labor saver, and therefore economic for heavy work, as is shown by its adoption by the New York Telephone Co. in their cable truck.

While considerable furore has been created by the proposed Edison storage battery, its adoption is not confirmed by an examination of the vehicles in the show, and the almost universally used Exide type of battery seems as yet to be the best storage battery system available. Private carriages, including broughams, hansoms and victorias, are gaining popularity, and in lmost every instance use the underslung method of battery suspension giving light weights. The light electric runabout is evidently growing in popularity for city use.

The Electric Vehicle Co., Hartford, Conn., has one of the largest and most attractive exhibits, containing some thirteen out of the twenty different types of Columbia automobiles listed in the company's catalogue for 1903, and including both gasolene and electric vehicles. As showing the new departure of the company in electric vehicles, the most noted examples are the Columbia inside operated coupe, the Columbia light runabout and the Columbia truck. The gasolene car is treated of in the department devoted to that form of power.

The coupe is designed to meet the demand for a thoroughly closed car operated from the inside and to dispense with the necessity of a driver. It is particularly adapted for physicians' use. When the windows are raised the occupant is thoroughly shielded

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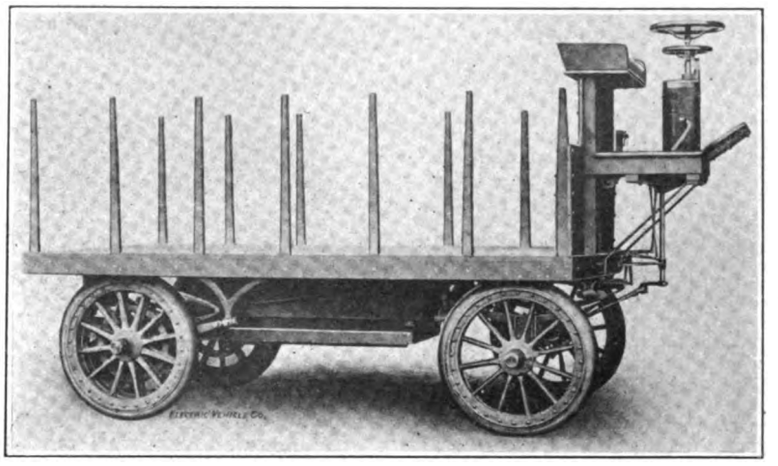
from the weather, although all windows are arranged to be dropped, giving what is practically an open vehicle. The controlling, steering and brake levers are all conveniently located within the compartment. A divided battery is used, one portion being located over the front axle while the other is arranged at the rear boot.

The light runabout also incorporates radical departures. The base, or frame, of the body is of angle iron, and is supported upon side springs extending between the forward and rear axles. Each of these springs is divided into two sections, each having independent leaves, and both spring sections being joined to the body at or near its centre. Upon one side the spring is connected to the body through a pivot, which gives the very necessary three point support for the vehicle body and will permit an elevation of a wheel to the height of some seventeen inches without bringing undue strains upon any of the parts. The battery is of the underslung type, provided with means for easily dropping it from the battery compartment, and is arranged in two sections, each having Exide cells fore and aft the centre of the body, thus distributing the battery weights with relation to the two axles. A motor of special design which weighs but one hundred pounds, and for its weight has an extremely high efficiency, is located between the two battery sections, and through a double reduction gear and chain drives to the balance gear, which is arranged upon the rear axle, which is a live axle. The parts of this axle are thoroughly inclosed to exclude dirt, the hubs of the wheels being recessed and extending over the outer casing of the live axle. The wheels are all of the same size and run upon ball bearings. A controller of the Rheostat type controls the various speeds of the vehicle, and is provided with five positions, the last two giving, respectively, twelve and fifteen miles an hour. The brake is equipped with the latest form of wooden block mechanical brake arranged upon the differential, and in addition there is an electric brake operated directly from the control. In connection with the mechanical brake lever, which is operated by the foot, there is shown a unique form of cut out, which at the same time locks the brake lever when it is set. This cut out consists of a level propecting rearward from the box dash, and having on its end adjacent to the brake pedal a series of notches for engaging and holding said lever in any desired position when the brakes are applied. This lever has a movement in a horizontal plane, and when thrown into position to engage the brake pedal opens a switch located in the box dash and thereby opens the circuit between the batteries and the controller. This is an essentially new feature in electric vehicle construction, and excludes any possibility of moving the control and turning on the current while the brake is locked. The wheel base is unusually long, 65 inches, and the weight 1,000 pounds. A side steering lever is also used. The side spring suspension of the body with one of its members pivoted to the body is really most unique, and, while giving easy riding qualities, provides absolute flexibility of the axle members with relation to the vehicle body, at the same time removing all severe and dangerous strains.

In addition to these vehicles there are also exhibited two electric broughams. The extension front pattern provides accommodation for four passengers, while the straight front pattern accommodates two. The forward seat of the extension pattern is hinged, and when not in use may be dropped, leaving a clear space. Both these vehicles are richly appointed, and are fitted with every convenience and appointed in a most approved manner. Large wheels are used on these vehicles, which contribute greatly to easy riding, durability and economy of operation. The controller is on the operator's left, and the vehicles are steered by a wheel. Both foot operated, regular and emergency brakes and a foot operated safety cut off switch are conveniently located to be under the control of the driver. In both cases the underslung battery is used, and comprise forty-four Exide cells with a capacity of 140 ampere hours at a thirty-five amperes race discharge, giving forty miles travel on one charge. In these vehicles the reach members of the under running gear frame are still maintained.

Little need be said about the Columbia electric hansom, the Columbia electric rear boot coupe, the Columbia electric cabriolet, the victoria, the tonneau, the special service wagon and the Columbia electric runabout known as Mark XXXI. These vehicles have all been shown, and are too widely known to require comment.

The Electric Vehicle Co.'s Columbia electric truck is no small contribution to the growing family of commercial vehicles. It has a load capacity of 5,000 pounds, and is provided with underslung batteries, all contacts for which are automatically made as the battery is raised into position and engages the hangers in the battery compartment. Perhaps the most important feature of this truck is a novel three point body suspension, which relieves the frame from all warping strains. No reach members are used, and the forward end of the vehicle is supported upon the transverse spring member of a half platform spring through a pivot.. The forward ends of the elliptic side members of the platform spring are shackelled to the forward end of the vehicle, and these half elliptic springs, of course, rest directly upon the axle. A double motor drive is used, giving independent drive to each of the rear wheels, and two very powerful brakes are provided, each foot operated and one acting upon the outside and the other upon the inside of the driving gear. The control is of the general type known as the "vertical controller," and follows closely upon the lines of the regular street railroad car controller. This provides four speeds ahead, one reverse and an electric brake. In addition to the main operating means of the controller, there is a small reverse lever, which upon removal locks the main controller drum in the "off" position. The Collinge type of axles are used, with wooden wheels 36 inches in diameter and 4-inch solid tires. Forty-two cells of Exide battery, arranged in a single tray, complete the equipment.



ELECTRIC VEHICLE COMPANY'S TRUCK.

Baker Motor Vehicle Co., of Cleveland, Ohio—This exhibit is shown by the American Automobile Storage Co., the New York representatives. As usual, it attracted more than ordinary attention, the new models, including the Newport and physician's chapelette, being strikingly attractive.

The same elegance in design which has brought the Baker car to the front is adhered to in the new models, and, while the general lines of construction have not been materially changed, the body designs have been made, if possible, more eye pleasing than in former models. The tubular running gear of the flexible type is used, with wire wheels mounted upon Baker ball bearings. The batteries are in each instance carried under the seat, giving free body space in the rear boots, and the motor is hung directly below the centre of the body, driving through a chain and differential gear on the rear axle. The vehicles are regularly supplied with twelve cells of the Gould battery. A special controller of very compact and simple construction is used, giving three speeds forward and reverse. This controller is absolutely non-arcing, and has no fixed step by step positions, but may be used by a novice with impunity. To secure a reverse a heel press is provided in the heelboard, and an interlock connects this press with the main controller drum to prevent throwing the controller from a go ahead to a reverse position without first bringing it to the zero, or cut off, point. A motor of most improved type, equipped with ball bearings throughout, is hung directly under the body, and its main shaft is provided with a brake drum, the brake band of which is controlled by a backward pull on the controller lever. In addition to this brake, a powerful foot operated brake is arranged on the drum of the differential. It is needless to say that the Baker carriages are distinctly in a class by themselves, and are the lightest vehicles combining necessary strength and durability in the show. The body designs and the color effects are up to date, and the finish is truly of the highest type.

The Studebaker Mfg. Co., South Bend, Ind., who exhibit for the first time, display four electric vehicles, two runabouts and two stanhopes.

One of the attractive features of these machines, from a mechanical standpoint, is the tubular frame, supported upon half elliptical springs over the front axle and full elliptical springs over the rear axle. One

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of the latter springs is pivoted to the tubular frame, thus giving all the necessary and desired flexibility and freedom of movement to the axle members. All battery weights are supported directly upon this frame, or gear, and the motor is also hung from the frame midway between the axles, and drives through chain and sprocket transmission to the rear axle. The batteries, twenty-four cells, which are of the Exide type, are carried in the rear boot and supported directly upon the tubular frame. The controller, which is of the series parallel type, gives four speeds forward and four reverse. The reverse is secured by a heelpress arranged in the heelboard, and an interlock is provided between the heelpress and the main controller drum, making it impossible to throw the controller from a go-ahead position to the reverse without first cutting off the current. Two brakes are provided, the main brake operating upon drums carried upon the rear axle, while the emergency brake acts directly upon the motor shaft. Both of these are controlled by foot pedals. A side steering lever is used, and the operator sits on the left of the vehicle. The motor is of the Westinghouse type, and gives the usual high efficiency of this type of machine. A novel cut out switch having a removable handle, and adapted to be thrown into three positions, gives absolute control of both the charging circuit between the charging plug and battery and the circuit between the battery and motors. The arrangement is such that when the charging circuit is thrown in the circuit between the battery and motors is absolutely cut out, thus permitting an examination of the motors at any time, even while the battery is on charge, without endangering the workman. By supporting the weights above the tubular frame and above the spring suspension it is possible to maintain high rates of speed over rough roads. The usual elegance of design in every appointment of the Studebaker cars is quite up to the standard of the company which has so long been maintained in their well known carriages.

The International Motor Car Co., of Indianapolis, Ind., display some eleven vehicles, gasolene, steam and electric. The electrics, the Waverley, include several new body designs, viz., the Stanhope, the Chelsea, the light, uncovered delivery wagon, the tonneau touring car and a surrey.

Among the special features of the Waverley vehicles is their light yet strong construction. Wood wheels have been adopted throughout, and the bodies are in every case supported on full elliptical springs over the rear axle, with a cross spring pivoted to the forward spring shackles and forming an auxiliary support for the batteries, which are located in every instance, except in the case of the delivery wagon and tonneau, in the rear booth. In the two latter cases the underslung battery suspension is used, giving free body space and low weights. Both double motor and single motor drives are used, depending upon the weight of the vehicle. A unique form of suspension is shown in the double motor drive. A trussed rear axle of the divided type has supported upon it and upon an auxiliary frame two motors, each driving to one of the independent sections of the rear axle through "herringbone" gears, giving a most efficient and absolutely noiseless drive. Of the new types shown for the first time at this show the tonneau and Stanhope are perhaps the most attractive. A very simple form of controller is used in all these vehicles, and gives three speeds forward and a reverse. A separate reversing switch controlled by the lever projecting through the heelboard is convenient to the left hand of the operator. A backward pull upon the main controller handle applies an electric brake, which becomes more or less powerful, dependent upon the speed of the vehicle. The controllers in every case have contacts of the knife switch pattern. All of the Waverley vehicles of this exhibit demonstrate the advantages of the reachless running gear. By the rear method of spring suspension above described and the use of an iron reinforce wheel in the body all reaches are dispensed with. The Stanhope body is of the recognized Stanhope type, with swell panels and a gracefully curved box dash. The wheel base is unusually long, being 72 inches, giving easy riding qualities. In addition to the electric brake there are two others, one acting upon the armature shaft and the other, including two expanding brakes, acting upon the interior of drums carried upon the rear wheels. The vehicle design, and in fact every appointment of these vehicles, is all that could



TWO OF THE NATIONAL ELECTRICS.

be desired, and is quite up to the standard formerly maintained by the company. Exide and Gould batteries are used, and are carried in trays for convenience of handling. In the larger vehicles forty cells are used, while in the lighter machines twenty-four cells are used, giving, respectively, eighty and forty-eight volts.

Ajax Motor Vehicle Co., New York, exhibited two electric vehicles, one a light runabout with top, and one without top. The top is made detachable, and may be easily put in place. Wire wheels are used with ball bearings throughout, and in fact ball bearings are used on the motor bearings. The tubular running gear is used, with two reach members extending between trussed axles pivoted at opposite corners to give the desired flexibility to the axle members. Two brakes are used, one controlled by the controller handle and operating directly on the armature shaft; the other foot operated and acting directly on the drum of the differential. For cut out lock a Yale lock is used, which absolutely locks the vehicle. The controller is of a special design, having unique features. It is of the rheostat type, and the first contact is made through abutting carbon contact, which absolutely precludes all arcing. The succeeding contacts are made by two sliding members of the knife switch pattern, engaging with co-operating spring contact members. These cut out the resistance in sections, and finally cut out the shunt, giving the high speed, which is fifteen miles an hour. All parts of the controller are mounted on a slate or marble base and thoroughly insulated with mica. It is a most perfect mechanical and electrical structure in every respect. The method of securing the reverse is also worthy of more than passing remark. It consists of a solonoid having two magnetic members arranged within it and controlled by a circuit manipulated by a press button in the controller handle. As the press button closes the circuit through the solonoid, the two sections within the solonoid adhere and form a direct connection with the reversing switch. The controller may now be moved forward through the succeeding reversing speeds, and upon being brought back to the cut off, or zero, position mechanically throws out the reversing switch. This is really the most unique controller in the show. The motor is below the centre of the body, and swings between buffers, which act with a cushioning effect to prevent jar upon steering and stopping. Batteries in each instance are carried under the seat, and consist of twelve cells of either Gould or Exide, as preferred. Altogether this is a very attractive vehicle, showing as unique features in the way of control as anything in the show. The control is as simple as possible, and may be operated even by a novice.

The Vehicle Equipment Company, Brooklyn, N. Y., represented by the Rainier Co., exhibited the heaviest vehicles of the electric type in the show. They comprised eleven vehicles of the following types: The hansom, coupe brougham and extension brougham, rear boot victoria, three light delivery wagons of 1,000 and 2,000 pounds capacity, two five ton trucks, one of which is a brewery design for fifty half barrels; the New York Telephone truck, of five tons capacity, with an electric hoist utilized for hauling cables through conduits, and an ambulance. Among the newest designs and those first exhibited at this year's show is the hansom and victoria, both models of perfection as to every appointment. The marked feature of all the vehicles shown is the running gear, which is of the pedestal type, with full elliptical springs, both fore and aft. The yokes inclose the sliding blocks of the axle members and give a universal movement with all desired flexibility to said members. The battery, as far as possible, is of the underslung type, cradled, and arranged in sections, each section comprising a separate tray, making a very convenient means of removing the several battery sections, and entirely doing away with the necessity of hydaulic lifts. The batteries are introduced from the side of the compartments. The double motor drive is used, the motors being of the general electric type pivotally hung on the rear axle and driving directly to the spur gears of the rear wheels. Expansion brakes are used on the rear drums of the wheel. The controller is of standard general electric type, of the series parallel order, giving four speeds ahead and two reverse, with an interlock between the reverse lever and main controller drum. The Equipment Company still maintains the general design of horse drawn vehicles as far as possible. While this company primarily turned its attention to heavy trucks and vehicles, they are now departing in so far as they are making comparatively light victorias of magnificent de-

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sign. The whole design of the vehicles bends toward simplicity, strength and durability.

Centaur Motor Vehicle Co., Buffalo, N. Y., shows an electric runabout having the usual piano box straight front dash type of body, carried on full elliptic springs in the rear and half elliptic springs in the front, which are attached to the body with body irons. Wood rim, wire spoke wheels are furnished. A ball bearing Westinghouse motor is used. The motor winding is arranged in two halves, allowing of a four speed series parallel system of control and reducing paralleling of the batteries to a minimum. The speed reduction is through the medium of a brass shrouded, rawhide pinion, meshing with bronze gear on a ball bearing countershaft in a dustproof case. Power is transmitted to the rear axle by roller chain, the pull on which is resisted by adjustable radius rods on either side. The battery consists of fourteen large capacity cells assembled in two trays for ease of handling. A new form of battery indicating instrument is the very ingenious device in which the complications of the ordinary ammeter are eliminated, but as the exhibitor was unable to give a description of it its detail cannot be here stated. Positive, double acting brakes are used, which, when idle, do not rest upon the brake drum. The controller is so arranged as to be interlocking at the point between forward and reverse, so as to avoid unintentional and sudden reversals of the motor. The cut out switch can be thrown either by foot or hand in case of a broken controller, handle or other accident. While the battery is being charged the motor and controller circuits are cut out so that any interference with the motor, controller or wiring can have no damaging effect.

National Motor Vehicle Co., Indianapolis, Ind., exhibited five vehicles, including runabout, stanhope and a park trap, using thirty-two cell Weston storage battery and sixty-four volt motor. The runabouts are equipped with 2½ horsepower motors of special construction. A reachless gear is used throughout, and the bodies are supported on full elliptic springs over the rear axle and new pattern C springs in front. The batteries are carried in the rear boot and under the seat. The motor in each instance is mounted upon the rear axle and drives direct to the differential gear. The controller is of the series parallel type, giving four speeds forward and four reverse by compressing a button on the end of the controller lever. This reverse is only operative when the controller is in the off position, thus preventing throwing the controller from the forward running position into the reverse position without first cutting off the main motor circuit. The special feature of this exhibit is a runabout which is equipped with thirty-six Weston storage battery cells, which, it is claimed, have given a run of 118 miles on one charge without destruction or injury to the wagon. Two brakes are provided, both pedal operated, one acting on the motor shaft, and the other acts upon the drums of the rear wheel hubs.



SUPERSTITION DEFIED.

One of the most unique vehicles of the show is the Neftel combination gasolene and electric carriage, shown in the booth of the Vehicle Equipment Co. This vehicle from its novelty invited unusual attention. Upon a complete chassis of heavy construction and at the forward end is mounted a two cylinder 10 horsepower gasolene engine direct connected to a specially wound dynamo, the two combined forming a generating unit which is capable of keeping the batteries fully charged at all times. Provision is made for easily cutting out the generating unit if desired, and just as easily starting the gas engine by the manipulation of a single switch, which automatically and simultaneously controls the oil feed, the ignition and generator controlling parts of the engine. An underslung battery of forty-four cells of the Exide type is used for furnishing the source of power for two motors driven directly upon the rear wheels through spur gear transmission. A series parallel type of controller is used, giving four speeds forward and two reverse. The entire engine is little, if any, larger than the conventional type of tonneau machine, and, having its generating plant always with it, needs no local charging stations.

The Electric Storage Battery Co. of Philadelphia, makers of the almost universally adopted Exide cell, have an attractive exhibit adjacent to the space occupied by the Electric Vehicle Co., the largest electric vehicle exhibit in the show. The Exide cell has become so popular and is so well known to the general trade as to need no recommendation or detailed description. It is used by the majority of electric vehicle constructors. The exhibit is tastily arranged and designed with special reference to the instruction of those not familiar with storage battery cells. Numerous plates of different styles and type give at a glance a good idea of the construction employed by the company. A new soft rubber plug is now used on the cells, which is much handier and does away with the old style hard rubber screw plug. It prevents all acid slop. Chloride accumulators also are shown.

The much talked of Edison storage battery, exhibited in Section 50, naturally attracted much attention. While the Edison battery does not appear in the vehicle product of the show, the display at the Edison booth was designed to show the several details of construction. The cells are made up of alternate plates of steel, two and one-half thousands of an inch thick, provided with small rectangular pockets, arranged to receive the metallic oxides of iron and nickle. The oxides are introduced in the rectangular openings in powdered form, and are closed in by perforated cups forced into the plate by hydraulic pressure. The complete cells are three and one-half by five and one-half by fourteen inches, and weigh about fourteen pounds, a capacity of two hundred Watt-hours is claimed, giving 3¾ horsepower, per hour. The several cells are sealed with special valves, which prevent the solution of distilled water and potash from slopping. The delay in bringing out the Edison battery has naturally caused many doubts regarding its commercial practibility.

The Westinghouse Electric & Mfg. Co., Pittsburg, Pa.—A surprise was in store for the automobile trade at this show when that most conservative firm, the Westinghouse Electric & Mfg. Co. opened its exhibit in Space K, in the restaurant, with a most complete line of electrical apparatus for electrically propelled vehicles. Their exhibit includes motors, controllers, battery indicating meters, cut-out switches, charging receptacles, charging plugs and connectors, motor generating sets, complete individual switchboards for charging vehicles, and charging outfits for stations.

This is the first appearance of the Westinghouse Electric & Mfg. Co. in the automobile field, and it is safe to say that the future of the electric vehicle will be much stimulated and improved by the wonderful mechanical facilities and unusual engineering ability of the concern. This will undoubtedly be more marked as this branch of the company's enormous interests is under the immediate influence and experienced guiding hand of Lieutenant Harold H. Eames. Lieutenant Eames, as is well known, is a pioneer in the automobile industry, and has been most closely allied with it from the beginning of the development of the electrically propelled vehicle. The Westinghouse Co. have standardized all parts, and it is safe to say that vehicles using their equipment will be surpassed by none. Every detail has been carefully worked out, and all of their apparatus appears to partake of the reliable and substantial character which marks this company's product in general.

American Coil Co., West Somerville, Mass—Electrical supplies. New: An automatic spark coil that gives a vibrator spark and automatically changes to a single make and break spark. The Little Wonder Dynamo is one with a system of storage in its base which does away with batteries for starting purposes. The American Pocket Ammeter, a reliable instrument for the pocket.



RESULT OF THE DEFIANCE.

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Steam

The steam vehicle has not stood still. New impetus has been given to it by the adoption of marked improvements both in the style of vehicles and the more finished details of their construction.

The number of exhibitors is perhaps not as large heretofore , and the gross number of vehicles exhibited has declined somewhat. There are some eleven exhibitors, showing a gross number of thirty-three vehicles, including twenty-three carriages, four wagons, five tonneaus and a stage. It is safe to predict that the steam vehicle will become more popular as the kerosene burners are perfected, and gasolene as a fuel is discarded. The makers undoubtedly recognize this as is shown by its adoption by the Mobile Co. of America and its contemplated use by the Locomobile Co., and possibly others. The present product is much more perfect than heretofore. Details of engine construction and controlling systems have been carefully worked out in a most mechanical manner, and conform to the best steam practice. All delicate parts are being made more accessible.

One of the striking features of the show, and one which will go far toward maintaining the demand for steam vehicles in the future, is the adoption by several of the manufacturers, including Grout Brothers, the White Sewing Machine Company, and the Locomobile Company, of a complete chassis, giving a touring car simulating in appearance the standard type of gasolene cars.

By using the complete chassis it is possible to materially increase the strength of the parts, and without spoiling the aesthetic design of the cars, to provide in proper and accessible positions the latest devices of the steam engineering art. These secure elastic control and great economy in operation, necessarily giving increased touring capacity on a given charge of fuel and water. The condenser and the compound engine are materially adding to the efficiency of the steam car, and the semi-flash boiler with its quick steaming capacity is in vogue.

Steam operated air pressure and water pumps with automatic control used in conjunction with hand operated pumps are being arranged in most accessible positions; and in one case in particular, that of the Mobile Company of America, are of particularly unique and finished design.

To summarize, it might be said briefly that wheel bases are increasing in length. Wooden wheels, with heavier construction throughout, are naturally following; steam economy is being looked after, and the general design of steam cars in conforming more and more closely to the gasolene type, which at present appeals so strongly to the public.

Even the lighter runabouts have their bodies provided with box dashes for lockers or enclosing an extra seat.

The White Sewing Machine Co., Cleveland, Ohio, unquestionably the banner bearers in the steam class, exhibited, of course, their Stanhopes and delivery wagons, but they were dwarfed in interest by the tonneau bodied, bonnet fronted touring cars, one finished in white and the other in black, not to mention those used out of doors for demonstrating purposes. The cars bore out the illustrations and specifications that had preceded them.

At the forward end of the hood, or bonnet, in place of the ordinary cooling coil of the gasolene machine there is arranged a condenser of ample capacity to take care of the exhaust steam, giving the greatest possible economy in water consumption. The water tanks, having a capacity of fourteen gallons, give a hundred-mile run. In place of the simple engine of last year, there is employed a compound engine, with a high and low pressure cylinder, developing 10 horsepower. This engine is hung directly on the frame of the car, and is thoroughly inclosed and run in oiltight casing, splash lubrication being used. The main shaft drives directly through a universal coupling to the differential upon the rear axle, and just in advance of this universal coupling is a drum on the engine shaft, arranged to be acted upon by a brake band controlled by a foot pedal. In addition there are two very powerful expanding brakes, acting directly upon the interior of drums upon the two rear wheels. These two brakes are controlled by a lever, at the right of the operator, and just outside a second lever, which controls the reverse for the engine, which is accomplished through change of the links altering the lead on the valves of the engine. A foot pedal is also provided for throwing the live steam directly into both cyclinders, thus making a direct acting, simple engine. The engine works either as a compound or simple engine. The exhaust steam is carried through the condenser, and a positively driven pump carries this condensed water back through an oil separator in which the oil is separated from the water. The water, of course, is carried back to the main tank. On the same piston rod with this pump is a second pump, actuated by the same means, and comprises the main pump for forcing water from the tank to the boiler. At the extreme front of the engine there is a pivotedly supported air pump, the position of which may be varied by depressing a pedal. As it is thrown into an upright position the hooked end of its piston is engaged by a pin projecting from the crosshead of the engine through the engine casing, and thus the air pump, for giving the necessary pressure upon the gasolene tank, may be thrown in or out at will, and a sufficient pressure easily maintained. Wheel steering is used, and is of the well known worm and segment type. Extending through the upright shaft of the steering pillar is a rod, bearing at its lower end a short lever which controls the throttle valve of the engine, and is provided at its upper end with a small hand wheel concentric with the main steering wheel. In addition to the positively operated pumps for the water and air, there are provided, just in front of the heelboard, two hand operated pumps, one for air and the other for water. A unique arrangement is shown in connection with the tonneau bodies for thoroughly venetilating the boiler compartment and carrying off all odors and excessive heat. A tube is arranged on each side of the vehicle body, and really inclosed by the fenders, which, at or near the centres, connect with the interior of the body and the boiler compartment and draws off all excessive heat. In every case aluminum bodies are used, and the water tank conforms to the outline of the dash. It is directly behind the bonnet. The special type of White boiler is used, giving unusual steaming qualities.

The weight of the car is 1,600 pounds, and is adapted for speeds up to thirty-five miles an hour. To give added strength artillery wheels are used throughout, 30-inch diameter, and are provided with 4-inch double tube detachable tires. The White possesses a compound engine, the only one exhibited, and, it is believed, used in an automobile.

Mobile Co. of America, Tarrytown, N. Y., has the largest display of steam vehicles in the show. The general design of the Mobile products has been materially changed, and several new models, including the victoria, the coupe and the merchants' delivery wagon, have been added. Among the old models are the touring carriage, the wagonette, light delivery, light surrey, heavy surrey, runabout and dos-a-dos. The general arrangement of the mechanism is the same or practically so for all of these cars. The flexible tubular running gear is still maintained, with the body springs supported over it, and a chain drive is used in every case from the engine to the differential on the rear axle. The newest features of the Mobile is a kerosene burner in connection with their regular tubular boiler. In this burner the kerosene is fed through a coil lying directly over the centre of the burner and offering a large heating surface. The oil is here vaporized and passed into the mixing tubes at the bottom of the burner pan. The burner base, or pan, is made up of a chamber having on its upper surface a series of raised nipples perforated at their upper ends, and intermediate of these several nipples there are air tubes, which pass through the upper and lower plates of the burner chamber. This construction insures proper combustion at the nipple burners, and at the same time supplies a sufficient amount of air at a point which insures the upper plate of the burner chamber against excessive heat. The heat coil or vaporizer, of course, must first be heated by a hand torch until the kerosene has been vaporized to a sufficient degree to be used in the auxiliary burner torch. It is not claimed that this burner will run more than twenty or thirty hours without accumulating a considerable quantity of carbonaceous substance, but a direct steam connection is provided between the boiler and the burner which provides a means for blowing out the burner and dissipating all carbonaceous deposits. The engine, as heretofore, is of the two cylinder, double acting type and hung just under the seat. The capacity of the fuel tanks and water tank has been increased. The two fuel tanks are located directly over the footboard, while the water tank is carried in the rear bonnet back of and around the sides of the boiler. A diaphragm operated needle valve, controlled by the pressure in the boiler, deter-

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mines the amount of fuel which is passed to the burner. The main water pump is constantly operated from the crosshead of the engine, and when the water rises to a predetermined point in the boiler an automatic regulator permits of free circulation of water back to the water tank. This regulator is of novel form, and consists of a chamber within which is arranged a tubular copper float mounted on the end of a pivoted lever, which controls a needle valve. Below this tubular copper float is a counterbalance ball, also acting upon the supporting lever of the float. When there is plenty of water in the boiler the pressure drives the water into the float chamber, filling the copper float and overbalancing the ball, thus opening the valve or by-pass back to the water tank. When the water in the boiler reaches the low level steam is passed into the chamber adjacent to the tubular float, evaporates the water contained therein and permits the counterbalance ball to close the by-pass, thus forcing the water directly into the boiler. A device of similar construction is arranged to provide an alarm by showing a jet of steam at the side and front of the vehicle when the low water limit is reached. Another very novel feature on these machines is the combined steam and hand operated water and air pumps. Both pumps together with the steam operating means are arranged in a single casing on the back of the dash and the main shaft, which is driven by the steam engine section of the pump, is extended across the vehicle and provided with a crank, which may be thrown into engagement with the shaft when it is necessary to use the air and water pumps without the steam. Ordinarily the turning of one of several small cocks will thrown into commission either the steam operated air section or the steam operated water section of the pump, or both. Wherever possible pipe fittings have been dispensed with and annealed tubes are used in lieu thereof.

The International Motor Car Co., Toledo, Ohio, exhibited one Toledo steam carriage of the runabout type and four gasolene machines of the tonneau type, comprising three distinct models, varying in horsepower from 12 to 24, and have a seating capacity of five persons. The Toledo steam car is of a distinctively new type with this company, having the general lines of the gasolene machine and a lowered bonnet inclosing the water tank, and having at its front end a large condenser of the honeycomb type. A new form of under running gear has been adopted in this carriage, comprising a truss rear axle of the divided type, with an A shaped reach frame extending to the forward axle and horizontally pivoted thereto. This gives a running gear of great flexibility. A 7½ horsepower, two-cylinder, double-acting engine is hung under the seat, and drives through chain transmission to the balance gear of the rear axle. The engine is hung, as heretofore, from a large ball joint, giving universal movement for flexibility and at the same time providing the main steam inlet. A new device on the engine is a side lever controller for the link throw; this may be used very effectively to economize in steam by varying the stroke of the valves, which are of the piston type. The side steering lever has been adopted in place of the combined pump and steering lever heretofore used. The exhaust steam from the engine is carried directly to and through an oil operator, provided with a relief valve, which automatically opens and takes care of all excessive back pressures. From the oil separator the steam is carried through the condenser, and finally back to the main water tank. The vacuum pump, constantly operated from the crosshead of the engine, circulates this condensed water. The boiler is of the improved Morgan type, and gives a semi-flash effect. All pressure gauges are provided with electric illuminators.

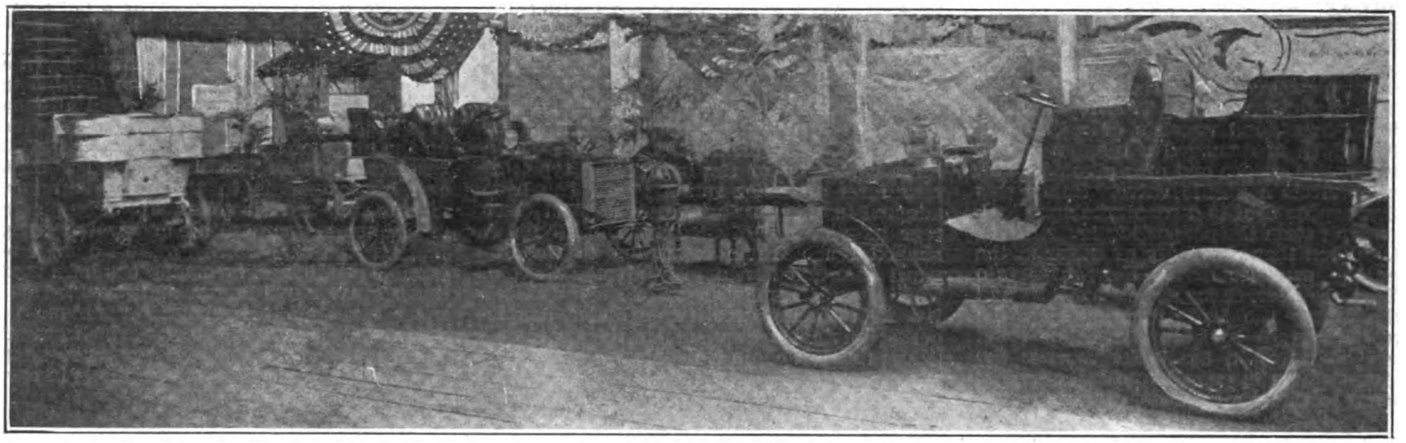
Locomobile Co. of America, Bridgeport, Conn., show these new steam models: The box front runabout, the light delivery wagon, improved Stanhope B, with wooden wheels and wheel steering device, and a steam tonneau, which is shown only in photograph. This could not be finished in time for the show. In addition a number of the older models of the company are exhibited. In all the steam machines shown the flexible under running gear is still maintained although it is proposed to use a complete chassis much on the order of the gasolene type and of the reachless form. The most noted changes and improvements in the steam carriages of this year are the following: The placing of the steam operated air and water pumps just below the footboard and in a most accessible position. The engine has been made much heavier and larger, and provided with roller bearings throughout. A unique improvement is a ratchet device which permits tightening the packings on the valve stems and pistons even while the engine is in operation.



Other notable features of this year's cars is the interconnection between the main lubricating cup and the throttle lever, which insures turning the oil on and off as the machine is starting or stopped, and the dispensing with the use of the torch for firing up. By opening a small by-pass into a small perforated tube a supply of oil can be secured for heating the vaporizer tube, which is perforated and has fins, giving a very large heating surface. This tube may be heated up by merely applying a match to the little burner casing, and when once the vaporizer tube is heated a full fire may be turned on at the main burner for the boiler. The method of control is the same as heretofore used, and with the exception of the small vehicles an irreversible wheel steer has been adopted in place of the side steering lever. The old form of spur differential gear with round axles has now been displaced by a style of improved bevel gear differential, the gear of which is mounted on roller bearings united to the drive members through square ended axles.

Stearns Steam Carriage Co., of Syracuse, N. Y., exhibit four steam vehicles, two tour-

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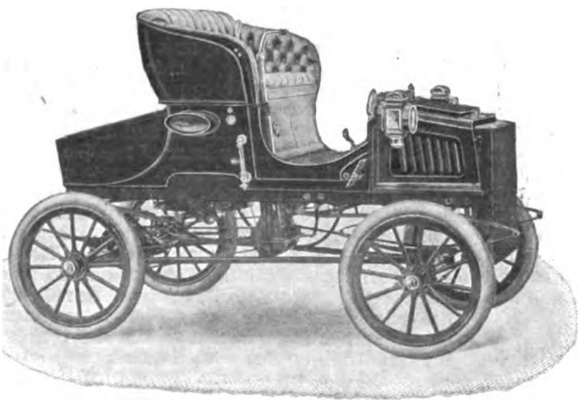


THE WHITE EXHIBIT.

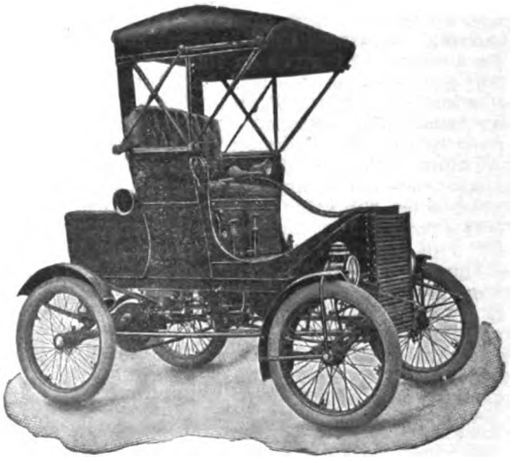
ing cars, a Dos-a-dos trap and a Victoria top Stanhope. The remarkable features of under construction of the Stearns vehicle are the hickory reach members, extending between the front and rear axle members and secured to them. This construction gives a flexibility to frame and at the same time gives a side spring effect. The same general design, except in minor detail is still adhered to by the Stearns Co., and certainly these vehicles have met with great success. The construction of these vehicles is slightly heavier than the corresponding types of other makers. Double cylinder engines are used of special design, hung directly over the seat and driving to the balance gear on the rear axle and varying in horse power from 8 to 12 for the different cars. The boiler capacity has been increased a little over last year's cars, and a pilot light is used for steaming up. A sight feed lubricator is now used for the main engine bearings, which is under forced feed, induced by steam pressure conducted to the oil chamber through a shunt tube from the boiler. The brakes, which are arranged upon drums upon the rear wheels, are of the expanding type, and completely inclosed against the action of mud and water. The steam is thoroughly superheated, thus dispensing with the use of a condenser. Fires are automatically controlled, dependent upon the pressure in the boilers. The water pump, actuated directly from the crosshead of the engine, is coupled up with a by pass which permits pumping directly back to the tank and circulating the water when a sufficient amount has been secured in the boiler. A low water alarm is provided.

The Meteor Engineering Co., Reading, Pa., uncovered a surprise in their steam tonneau, with aluminum finish and blue and gold stripping and brass trimmings. The frame is of angle iron, with four full elliptic springs. Artillery wood wheels, with 30x3½ inch detachable tires are used. Both axles are square and solid and are connected by tubular swivelled reaches from the centre of the front axles to the shoulder or collars of the rear axles. The boiler is of the fire tube style, with 713 half-inch copper tubes located in front under a bonnet. A 20-inch three-compartment burner is used, fed by a vaporizer first filled with alcohol, which is ignited, and after the gasolene is sufficiently vaporized in the auxiliary coil the auxiliary valve is shut off, feeding back then through the main nozzle. Forty-five gallons of water and 13¾ gallons of gasolene are carried. The gasolene is fed by steam and air pressure. Water is fed to the boiler by crosshead steam and hand pumps. The forced draft also is used. All of the valves are within easy reach of the operator, being on the brass covered dashboard in front of him. The engine is of a two-cylinder 10 horsepower slide valve link motion, placed horizontally under the footboard, where it is easy of access, and is covered by a casing to protect it from road dirt and mud. The drive is by a chain through a compensating countershaft, and from there by two chains to the rear driving wheels. The chains are adjusted by two radius adjusting rods, and there are also two similar rods on the engine. The countershaft is hung to the centre of the frame by a rocker plate, and is not attached by either end of the frame or the body, thus taking the strain off the body. On the wheel steering the throttle is operated by a small brass wheel, which works through the centre of the steering posts. The whole construction in its external appearance resembles the gasolene vehicle. Two other models of steam carriages are shown, there being no change in them since last year.

The International Fire Engine Co., New York, exhibit one of the novelties of the show in a steam propelled fire engine built by La France Fire Engine Co. This vehicle has an unusually heavy underrunning gear, consisting of channel irons pivoted to the forward and rear axles. The main boiler, of the fire tube type, is located at the forward end under the driver's seat, and supplies steam for two separate engines, which give an independent drive for each of the rear wheels. Each of these engines is of the double cylinder, double acting type, and both are controlled by a single throttle lever operated from the centre of the seat. Either engine may be cut out of operation if required. Wheel steering is used, and consists of a worm with traverse block or nut, operating directly through a bell crank upon the steering wheel connections. The vehicle carries at either side a chemical tank of thirty-five gallons capacity and 150 feet of chemical hose. It also has body space for 1,000 feet of 2½-inch hose. The gasolene and air tanks are automatically supplied with pressure from directly operated



TOLEDO.



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pumps. Provision is made for keeping up steam in the boiler by connecting with an ordinary illuminating gas supply, with an automatic cut off, which breaks the connection and frees the vehicle as it starts on a run, the fire being subsequently maintained by gasolene burner of special construction. The speed of the vehicle is twenty miles an hour.

The Prescott Automobile Mfg. Co., New York, exhibit their famous steam car which made such a great record in all the tests of last year; also an entirely new steam wagon. This has a tubular running gear with wooden reach rods, wire wheels, specially constructed rear axles—that is, instead of the usual arch, it is trussed underneath. Four full elliptical springs are used. The body has a combination drop seat front. The boiler is a dry plate Tonquin, with superheating coils. The burner is a special burner, embracing several novel features, including a pilot light, which is part of the main burner, fed by an independent mixing tube. This pilot light will maintain full steam pressure for an indefinite period. With this boiler and burner full pressure is maintained under any and all conditions. The engine is a Mason 2½x3½ inches of the latest type. Lubrication is by automatic forced feed. It has a capacity of ten gallons of gasolene fed under air pressure; thirty-two gallons of water, and is equipped with a steam water lift. A single charge of water will run the car forty-five miles under normal conditions. The gasolene supply is sufficient for upward of 100 miles. It has a crosshead water pump, a Marsh steam water pump and a hand lever pump. It is also provided with a Marsh steam air pump and the usual hand pump. The common method of reversing by a hand lever is dispensed with, the reversing being done by a foot pedal, and the fire is controlled by a hand ratchet valve from the seat. Certainly a strong, substantial, well finished steam car.

The Hoffman Automobile & Mfg. Co., Cleveland, Ohio, display a steam runabout. It is of the usual type, with tubular running gear and with an extra folding seat in front. A flash steam system of generating is used, which obviates the need of a water glass, fusible plugs, water alarms or anything of like character, there being no water level to maintain.

Tires

All told, the tire changes seen at the show are of remarkable interest. The number of them leaves no doubt about there having been unusual activity among the makers during the past year, and the character of them marks the emphatic tendency toward the use of double tube detachable tires that has set in. At every space occupied by one of the makers of recognized standard goods was to be found something new, and in some instances the new things marked a radical departure in the firm's product, or a truly novel invention. All were agreed that the demand for double tube tires is heavy, while that for single tubes is almost nil.

In tire making the most remarkable achievement in recent years is that which was announced and exhibited at the show by the Diamond Rubber Co., at spaces 57-58. The non-blooming tire produced by this concern is a distinct and radical departure. The blooming out through the tire of the sulphur in the rubber to the surface has been the bête noir of all users of pneumatic tires ever since they were invented With the sulphur on, no cement made will make a plug in a hosepipe or a patch on an inner tube "stick tight," and every one who has tried it knows how difficult it is to remove the sulphur and make a good job of a repair.

The Diamond Rubber Co. has only just assumed the role of makers of double tube tires, but they have come to the front with something revolutionary. The "blooming" of the sulphur through the tire after the vulcanization is prevented by an ingenious process which removes the sulphur at a certain stage of manufacture, after it has served its purpose. With no sulphur "bloom" upon the inner tube, patches can be slapped on with little delay and the assurance that they will stay. This will be a boon to every automobilist, cyclist and driver using such tires, and should result in a boom in the business of this progressive firm of manufacturers.

This process promises a solution of the problem encountered by the rubber manufacturers in making satisfactory bulbs for motor car horns—bulbs that will not bloom and check. It is claimed by the Diamond people that non-blooming bulbs can be made if people are willing to pay the money for them.

The G. & J. shows a radically new step being taken on the part of its makers by the offering for the first time of a smooth tread tire. The corrugated tread will continue to be made, the new article being only an addition to the line.

The Fisk shows another instance of a firm that has decided to respond to the demand by adding a detachable tire to its line, and in this case it has been done in a remarkably clever and novel fashion, as shown by the description further on.

The Hartford Company has made a radical departure in the method of constructing its Dunlops, the International is offering a hose pipe with two vulcanized inner tubes, the Goodrich people show a new fastening clip, the Goodyear a new clincher of elliptical shape and so on through the list. Several comparatively new puncture proof tires are shown, a couple of them being on the freak order.

Hartford Rubber Works Co., Hartford, Conn.—Hartford single tube, Dunlop detachable and Turner solid tires. New: A radical departure in the construction of the Dunlop tire has been made by having the fabric vulcanized instead of put together by hand as heretofore. Red inner tubes as well as gray ones are now furnished in the automobile tires, and these are of six-ply rubber that can hardly be torn. In the endless, one-piece Turner tire a modification is shown by the greater rounding of the edges instead of leaving them nearly square. The demand for this tire, which is bolted to a flat rim surface with protecting side flanges, is increasing steadily. The universally known Hartfords have not been changed, presumably because of there being no way to improve them.

Diamond Rubber Co., Akron, Ohio—Diamond single and inner tube tires.

This exhibit is splendidly manned to attend to a volume of business in brisk style, as its sales managers from all the large cities are on hand to assist the New York manager, O. J. Woodward, who, with D. W. Nutter and G. J. Bradley, is in charge. Although in use for several months, the Diamond detachable is staged for the first time, and interest in it is heightened by the use of a new development in inner tubes, i. e., one that is absolutely non-blooming. The sulphur is all eliminated at a certain stage of the manufacture. There being no sulphur to bloom out, patches when put on have a firm seat. This is an absolute novelty.

Fisk Rubber Co., Chicopee Falls, Mass.—Fisk single and double tube tires. New: A double tube detachable tire that is fitted to a flat rim and held in place by a clamping ring that fits over a cone wedged shape bead on the bottom of the shoe. The ring not only clamps the bead together, but binds the tire to the rim so as to prevent creeping. The rubber head of the tire has a flat bottom that fits the rim, and when the clamps that hold the fastening ring are removed, the whole slips of without prying or tugging. A great virtue in this new tire is in the fact that the air chamber is entirely above the rim and positively cannot be pinched. In the well known Fisk single tube tire more rubber has been added to the tread and a layer of fabric has been taken out and replaced by a layer of rubber. The patented fabric of the Fisk company with its soft woof of cotton that prevents the threads of the fabric from cutting is used in all the tires.

The B. F. Goodrich Co., Akron, Ohio—Goodrich Clincher tires. New: A change has been made in the clips of this popular pneumatic by adding a new and simpler clip that works with a lock nut and washer and dispenses with the thumbscrew of the former clips. Both styles are still made, however, the "Lock washer" covered with leather and canvas and the "Thumbnut" not covered, being designed for tires that have no flaps.

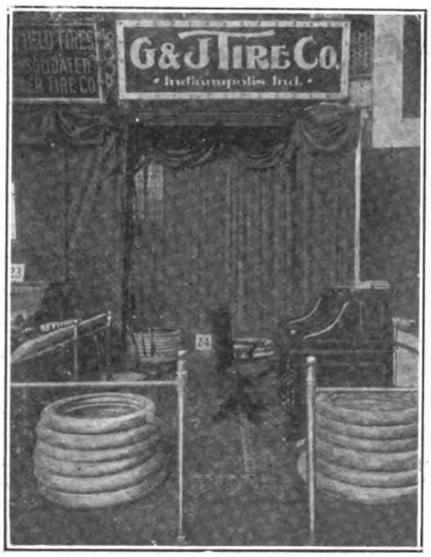
Cummings Tire Manufacturing Co., New York City—Cummings Cinch Tire Protector. This is a new puncture proof strip for the tread of tires made of waterproofed leather with a base of heavy duck. It is cinched

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around the tire by means of wires. It is claimed that it is resilient, yields better traction and prevents skidding.

International A & V Tire Co., Milltown, N. J.—The widely known A & V tires, both single and double tube.
New: An Endurance hosepipe tire of splendid workmanship and superior finishing, made with two vulcanized inner tubes.

The G. & J. Tire Co., Indianapolis, Ind.—G. & J. inner tube clincher tires. New: A tire with a smooth tread is shown as a new feature on this standard product and the whole line has been standardized to Goodrich and Diamond rims.



Standard Anti-Friction Co., N. Y. City—"Be-No-Ca" tires. New: The whole tire is novel, being built with a continuous series of solid rubber trusses on the inside. It is claimed that it is resilient and it certainly is non-collapsible, for it is not pneumatic.

Firestone Tire and Rubber Co., Akron, Ohio—Firestone solid rubber tires. New: A contract with the Interstate Transit Co. of St. Louis to equip all their automobiles running between St. Louis and East St. Louis with Firestone tires.

Consolidated Rubber Tire Co., N. Y. City—Kelly-Springfield tires. New: A traction tire of solid rubber, having a continuous central tread with alternating buttons or square blocks of rubber on opposite sides of it.



Metallic Rubber Tire Co., New York—The concern's pneumatic tire, with its tread studded with metal studs, is shown, and an object lesson given of its work on an inclined plane, intended to represent a slippery street.

Goodyear Tire and Rubber Co., Akron, Ohio—Goodyear clincher detachable tires. New: A clincher tire made with eliptically shaped shoe.



Accessories

This year the exhibit of supplies, parts, accessories and sundries has been dwarfed by comparison. The great number of complete cars throws a deep shadow over the supply stands, and yet there are three score of them, and when thoroughly investigated they are found to contain enough of interest to make a small show by themselves.

Outside of motors and tires, there are any quantity of new things and changes in gears, lamps, spark-plugs, batteries, coils, wheels, bearings, bells, lubricants and similar goods. The new things in the ignition line are of particular interest and indicative of a general striving toward improvement in this respect. Even in horns there is something new in the way of a thin sheet rubber covering for the mouth.

C. F. Splitdorf, New York City—Splitdorf spark coils. New: A vibrator on the outside of the coil box that has a thumbscrew adjustment for increasing or lowering the tension of the vibrator and so multiplying the vibrations and intensity of the spark. An attractive and instructive feature at this exhibit is a display of a giant spark from a giant Splitdorf coil. The spark demonstrates the perfectness of the Splitdorf insulating system by leaping in a lurid flash from one copper wire tip to the other across a gulf of eighteen inches. It could be made to jump twenty-five inches, but what is being done is sufficiently convincing for those who want a coil that absolutely does not leak. A complete coil for motor bicycles was shown on a 1903 "Indian." In the bicycle coil a new feature is an insulation of sheet rubber inside the outer tube of fibre. This gives perfect insulation from the frame of the machine without danger of there being any breakage as is the case when the casing is made of hard rubber. The features of silk covered wire, with silk paper and beeswax between each layer, peculiar to the Splitdorf coil, are retained and also the feature of having the primary and secondary coils and condenser all in one box, so that they are less affected by the vibrations of the vehicle.

The Weston-Mott Co., Utica, N. Y.—Artillery and wire wheels, front and rear axles. New: The superior character of this firm's work is so widely recognized that any addition to their output is assured of support. The firm now offers a new rear axle complete, in which there is one truss to resist the chain pull and another truss to sustain the load. Hyatt roller bearings are used and the compensating gear has no casing in which dirt can be hoarded. The axles are made for both the front and rear end of the body and are for their strength extremely light. A new pattern of artilery wheel is shown which is unusually light and very natty in appearance. It is made up with the standard crescent rim instead of the ordinary rim with flat base, lending strength as well as sightliness.

Charles E. Miller, New York City—Accessories and supplies. New: The Rutenber gasolene motors, two and four cylinder water cooled on French lines from three to eighty horse power. The Fox valveless steam engine, which is shown in action by means of steam piped up from the cellar; in this the pistons cut off at one-half stroke and travel the balance of the stroke by expansion. The principle of operation is that one cylinder and piston acts as a valve for the opposite one, both for the exhaust and inlet. This is reciprocated as the position of the pistons change. No mechanism of any kind is in the cylinders—only an arrangement of ports.

The Moore automobile boiler feeder and air pump is another new article, a pump of record breaking power, of which it is said that it never refuses to do its work. This pump is the second working exhibit at this space, which is one of the most varied and interesting among the supply dealers. Another working exhibit is that of the Apple Dynamo and Apple Magneto, both of which are run by a common belt from the same

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electric motor so that they have equal speed. By this means it is shown that the dynamo gives the superior spark. Some of the specialties shown at this space are: Salamandrin boilers, of which there is one which was made to order for the British War Department and awaiting shipment; Pignolet voltmetres, ammetres and volt ammetres, Kingston carburetters, Corson bicycle stands, Whitney roller chains, Miller gasolene motors, Turner torches, Franz burners, "F. & O." belt dressing, fenders and hoods, motor castings, gas lighters, lamps, bells, goggles, coats, caps, lubricants, etc.

Muncie Wheel and Jobbing Co., Muncie, Ind.—The "Bann-Auto" wheel. This is a new invention that presents some striking improvements on the common type of wood artillery wheel. There is a wood hub inside the metal hub. The spokes have long tenons reaching to the wood hub and these are mitred into place. Instead of being held by rivets only there is a double row of rivets and bolts around the hub, the rivets having the lower line and alternating between every other pair of spokes with the bolts. By this method it is made next to impossible to rip out a spoke or loosen it, and one loose spoke would not cause the others to loosen. This seems undoubtedly a perfect traction wheel for automobiles. The manner of keying the wheel to the ordinary driving axle or axle and sleeve is such that the drive comes on both flanges equally through a common square key. With this construction the axle can be left full size through the back flange and almost through the front flange, which adds greatly to the strength of the driving axle.

The Electro Magnetic Speed Changing Gear Co. exhibit one of the novel features of the show. In place of shifting or sliding gears, with side operating levers for giving the various speed changes forward and reverse, an electro-magnetic clutch is used. This is controlled by a very simple switch device.

The several changes for acceleration or retardation of motion to any desired rate are made without disagreeable jarring and with little surface wear, the bearing surfaces being run in an oil bath. It is impossible to strip gears as in the case of the sliding gear transmission now almost universally used. The electro-magnetic friction clutches constitute the flywheel of the engine, and the two gears of the speed changing contrivance are utilized in the operation of the motor valves. The motor and speed changing gear form a self constituted unit, may be tested as a unit, and may be applied to a direct bevel gear drive or counter shaft drive with chains. The gear is always in mesh, and drives or runs free with relation to the driving shaft dependent upon the action of the electro-magnetic clutches.

A. H. Funke, New York City—Kelecom motors, Autolyte acetylene lamps, spark plugs and imported horns.

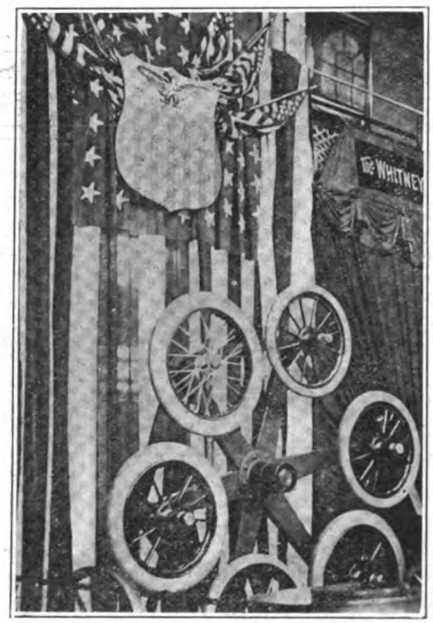
New: The Baldwin spark plug, which is designed so as to prevent carbonizing and short circuiting; and this is done in a very novel way. The plug is made with a porcelain insulator, and the outer collar, which screws into the engine, is of steel. There is no tip or special sparking point on the plug. The connecting wire that passes through the plug is attached to a mushroom head of nickel steel. This head is made so that it fits down over the porcelain insulator and prevents it from sooting and short circuiting. The spark jumps from anywhere on the lower edge of the umbrella or mushroom head to the metal collar, and, both of these being circular, the plug has 360 points at which to spark. Seeking the path of least resistance, the current, if it finds one place clogged with soot, jumps and makes the spark at the next easiest point. Another feature about the plug is that of the carrying wire not being cemented to the porcelain, as is usually done, but is held in place by a set nut, and at the bottom of the porcelain,



EXHIBIT OF WHITNEY CHAINS.

between it and the steel wire, there is a small spiral spring which takes up what difference there is between the expansion of the metal and that of the porcelain, so that the latter rarely if ever cracks.

Seven new models of the Autolyte lamp are shown for 1903, making eight styles in all that now are offered. Two novel features have been introduced in connection with the lamps. One of these is the making of a



AMERICAN BALL BEARING CO. DISPLAY.

separate generator, which can be stowed away in some convenient part of the machine and the gas generated carried to the lamp through a rubber or brass pipe. By this means a small lightweight lamp can be used which will burn a long time and give a fine field of light. The other innovation is a candle attachment for the lamps. These are made to hold an ordinary house candle and fit into the socket occupied by the gas burner, which is removable. The idea in this is that for a short trip about the city a candle which will last about three hours can be used and the gas lamp not dirtied. There is a place at the back of the lamps where the idle gas burner or candle holder can be carried when the other is in use. The now well known Belgian-made Kelecom motor, noted for the strength and beautiful finish of its castings, is part of the exhibit that is a staple attraction. One other interesting novelty shown by this concern is a mouth covering for horns, made of thin rubber, instead of wire gauze, so that the reed is absolutely dustproof. The rubber distends when the horn is tooted, and the tone is not impaired.

Veeder Mfg. Co., Hartford, Conn.—One of the most interesting, as well as showy, exhibits is that of the well-known Hartford calculating instrument makers. Odometers and their attachments, counters and tachometers comprise it, the first being shown mounted on stands and run continuously by dynamos at prodigiously high rote of speed. They are made in both the single and trip form, and to fit all sizes and shapes of wheels.

The Tachometer has been in use during the past season, but is now exhibited for the first time. Its ingeniousness is only equalled by its simplicity. Two discs with centers slightly depressed so as to form a reservoir for a colored liquid, and with spur-toothed circumference, are mounted on a similarly toothed wheel affixed to the front wheel of the car. The inside of the revolving disc is ribbed, and as it turns these ribs churn the liquid and by centrifugal force cause it to ascend into a tube which leads to a thermometer-like indicator placed on the dashboard or bonnet. Obviously, the faster the vehicle wheel revolves the greater will be the centrifugal force agitating the liquid and the higher it will rise. The liquid being colored is easily seen on the indicator.

E. J. Willis, New York City—Motors, supplies and accessories. New: The Merkle 1903 motor bicycle, with cushion frame. Also the Herz spark plug, which is shown giving a fat spark when covered with oil. This is a German invention in which a composition of stone is used for the insulating sleeve instead of porcelain. It can be thrown when hot into cold water without being cracked. It is said to be absolutely non-carbonizing, and seems to be so. Another new article in the Willis line of goods is the Perfection Magneto made with a movable base, so as not to suffer from jarring. Another new thing with Willis is the lamp of the Standard Carriage Lamp Co.

C. J. Moore Mfg. Co., of Westfield, Mass., exhibit an unfinished car in the white with a filler coat, ready for power. It is of the runabout type, with a bonnet front, arranged for either eight, twelve or fourteen horse power motor, with a tubular gear and tubular body frame and a wheel steering rod which tilts at the base of the steering rod. They also show a vehicle finished complete known as their Model "J," with a tonneau body of detachable type, equipped with a two-cylinder 16 horse power vertical Frisble motor. The transmission gears are of the sliding type, with friction clutch inside of case. The frame is a tubular and truss one, having long 36-inch platform springs with solid steel braces on rear axle arch. A bevel transmission shaft is used. The foot pedal brake is combined with the hand lever, which locks a ratchet and releases automati-

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cally through an upright pillar on the right hand side of the car. Two vertical speed levers are in the centre of the floor of the car, to the left of the wheel steering.

Auto Supply Co., New York—Running gears, motors and parts.

New features: Three speed transmission gear, three speeds forward and one reverse. The drive from the high speed is direct, and all the teeth are engaged at once by reason of telescope gears being used. Thus danger of stripping gears is abolished. Motor with mechanically operated valves, made from one to four cylinders. Three cylinder single acting steam motor, all cylinders operated by one rotary balanced valve; there are no links or stuffing boxes; it has a reverse operated by gears which permits of instantaneous reversing at a speed of 2,400 revolutions without perceptible jar; the cylinder casting is provided with a chamber for muffling the exhaust, so that no separate muffler is needed.

Lane Motor Vehicle Co., Poughkeepsie, N. Y.—A steam touring car, with two seats, $1,500, and a runabout at $1,075.

Desberon Motor Car Co., New York, exhibit a 7 horse power car with a two-cylinder vertical motor. The cylinder is air cooled, but runs up into a water cooled head for about two inches, which is a solid casting without gaskets; the water is fed by a rotary pump actuated by gears from the main crankshaft. The radiators are of tubing wound with wire in loose intermeshing rings in a brush form in rows. A bevel gear drive is used, and sliding transmission. The front axle is curved downward between the front springs in order to clear the motor, and comes within seven inches of the ground. On the wheel steering pillar are located the airbrake and the gasolene control by three small levers, having the pin arranged to drop into suitable slots on a brass plate. The speeds are also controlled by a thumb lever underneath the steering gear wheel. An upright lever with hand locking device disengages the clutch and brakes on the rear wheel. A foot lever also disconnects the clutch and puts the break on.

Twentieth Century Manufacturing Co., New York City—Twentieth Century Lamps for all purposes. New: The newest thing at this space on Wednesday was a cold in the head of "Ex-Gov." F. E. Castles, but it was not so bad but what he could talk about the "La Belle" gas lamp, a brand new creation with an eight inch front of which Mr. Castles said: "I wish you could tell me how to get 10,000 of them to deliver, that is all. We have the orders." The "La Belle" is of 1,500 candle power and on the same plan as a locomotive headlight with a true parabola reflector and is guaranteed to throw a better light than any other lamp on the market. A new line of tail and side lamps also have been added to the catalogue.

Whitney Mfg. Co., Hartford, Conn.—This well known chain making concern have a space fitted up quietly and in good taste. In addition to a showing of Whitney roller and block chains, a dozen chains on sprocket wheels are mounted on a stand, each pair of sprockets being connected with the next one by means of a continuous shaft, the series being so arranged that a large sprocket is alongside a small one, thus gearing first up and then down. The workmanship and finish of the Whitney standard chains are of the highest class, and the judicious solving of the problem of using the most advantageous sizes of rollers, etc., is to be commendable.

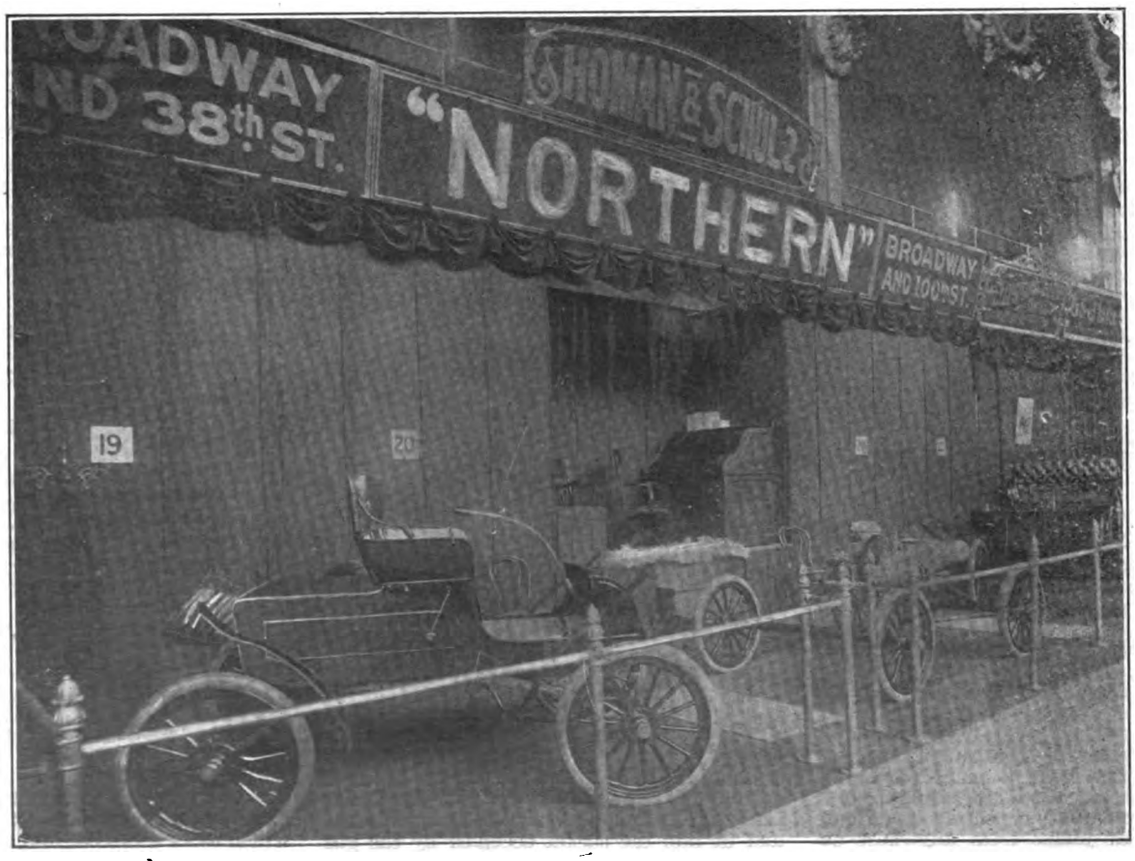
Badger Brass Mfg. Co., Kenosha, Wis.—Solar gas and oil lamps. New: A patent automatically operated valve which regulates the supply of both water and gas. The gas, when a certain quantity has been made, backs up against the water and prevents and further generation until the pressure of the gas is reduced by consumption at the tip. Oil lamps for side and rear signals are also being made now in the well-known Solar patetrns that have been standard since gas lamps first came into use. Seventeen different models of the Solar are now produced.

Goodson Electric Ignition Co., Providence, Mass.—Magnetos and spark plugs. New: An alternating magneto generator, provided with a little spring attached to a crank on its armature shaft which is put under tension and tripped into action by the engine, rotating the armature within the magnetic field, producing a single electric impulse and at the proper time to produce the spark. It is capable of being rocked on its base to change the time of ignition at will. In connection with the magneto is shown an automatic plug comprising an electo magnet with a sparking armature.

Electric Contract Co., New York City—Steam gauge and speedometer lights, sparking batteries, safety lights, wire terminals, etc.

New: A little two candlepower incandescent light, made in one piece, with a ring for holding a speedometer. The incandescent lamp has a reflector back of it, and is so inclined over the rim that it will shine on the face of the speedometer; it is inclosed in a steel thimble to prevent breakage, and a bull's eye is cut in the thimble in front.

American Ball Bearing Co., Cleveland, Ohio—Artillery wheels, ball bearing steering wheels, rear axles.



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New: A rear axle on which the compensating gear cover, the outer cups and the hubs are drawn from sheet steel and electrically welded, thus doing away with all brazing; also a new ball bearing artillery wheel in which the spoke line is over the bearings and is as close as possible to the bolt in the steering head.

Cole & Woop, New York City—Carriage bodies for automobiles.

New: An electric runabout made for George Gould, jr. It has twelve cells, weighs 390 pounds, is about four feet long by three wide, and three and one-half feet in height. It is fitted with three speeds—three, five and twelve miles—and is said to be capable of thirty-five miles an hour. It has been run three thousand miles.

Gleason Peters Air Pump Co., New York City—Air pumps, cocks, guages, etc. New: A hand oiler with a reservoir cylinder eight inches long and a curved stem five inches long to oil bearings that cannot be reached with an ordinary oil can. A triple cylinder pump to be run by an electric motor or attached to shafting for storing air pressure in tanks and a tank for the dashboard are other new things.

Shelby Steel Tube Co., Pittsburg, Penn.—Cold drawn seamless steel tubing. New: Square drawn tubing in all gauges and of all lengths for bedsteads, the interior of elevators, decorative work, etc. The full product of this, the largest steel tubing concern in the country, is too varied to be mentioned at length and too well known to need it.

Thomas J. Wetzel, New York—Midgeley tubular steel wheels, Brown-Lipe spur, equalizing gears and Timken roller bearings.

New features: Midgeley chariot wheel made to look like a wooden artillery wheel; a No. 9 model Brown-Lipe gear for bevel gear shafts; a new divided axle with Timken roller bearings.

Hyatt Roller Bearing Co., Harrison, N. J.—Hyatt roller bearings. These bearings consist of hollow flexible rollers which are self-compensating and can be used without journal bearings or raceways at the end, thereby eliminating two wearing points. They are made with a hollow oil reservoir and a spiral oil conveyor.

American Roller Bearing Co., Boston, Mass.—Roller bearings for vehicle wheels and machinery. New: The newest thing in relation to this product is the increasing popularity of it attested by the fact that last year there were only eight or ten makers at the show using them and at the present show there are just twenty-eight.

Standard Welding Co., Cleveland, Ohio—Electric welded tubing and parts.

New features: A seamless clincher rim, the welding of engine cranks, of tubular axle housings and field rings, and the making of seamless steel bottles for laughing-gas, etc.

Baldwin Chain & Mfg. Co., Worcester, Mass.—Baldwin chains. New: A muffler, just on the market, that is giving great results. A full line of the standard Baldwin chains is shown.

The New Process Raw Hide Co., Syracuse, N. Y.—Noiseless pinions and accurate metal gears. There has been no change in these goods, the only news concerning which is that they are giving satisfaction.

National Carbon Co., Cleveland, Ohio—Liquid and dry cells for ignition batteries.

New feature: A Rex wet cell with closed circuit and a new quadruple autocell battery.

Dixon Crucible Co., Jersey City, N. J.—Graphite lubricants. New: A compound for motor chains, composed of special graphite and animal and mineral lubricants. It is made up in three pound cakes.

Champion Mfg. Co., Brooklyn—Champion transmission gears.

New feature: A high speed clutch, in which all the wear is on two hard fibre washers which can be easily replaced.

The Post & Lester Co., Hartford, Conn.—Supplies and accessories. New: The 1903 Clement bicycle motor of 1¼ horsepower; "Billy" French lamps.

Motor & Gear Co., New York—A chassis in the rough is shown, having a two-cylinder veritcal motor of modern design, and a transmission with sliding gears.

The Whitlock Coil Pipe Co., Hartford, Conn.—Radiator coils and radiators. New: A radiator of the honeycomb type for use with a fan.

Atwood Mfg. Co., Amesbury, Mass.—"Stay-Lit" lamps.

New: A ball shaped rear lamp.

The Dow Portable Electric Co., Braintree-Mass.—Spark coils, batteries and plugs.

R. E. Dietz Co., New York City—Regal oil and Lucifer gas lamps.

Baker Co., Newark, N. J.—Jump spark terminal wires and platinum ignition tubes.

George W. Condon, Newark, N. J.—Condon's roller tube expanders.

Wheel Within Wheel Co., New York City—Wheel within Wheels.

Rushmore Dynamo Works, Jersey City, N. J.—Acetylene searchlight lamps.

Lindsay-Russell Co., Indianapolis, Ind.—Transmission gears and other parts.

Merriam-Abbott Co., Cleveland, O.—Charging plants.

Barber Mfg. Co., Boston, Mass.—Kerosene burners.

Elwin L. Smith, Boston—I. M. C. steering checks.

Rose Mfg. Co.—Lamps.

Gray & Davis, Amesbury, Mass.—Lamps.

Some Souvenirs of the Show.

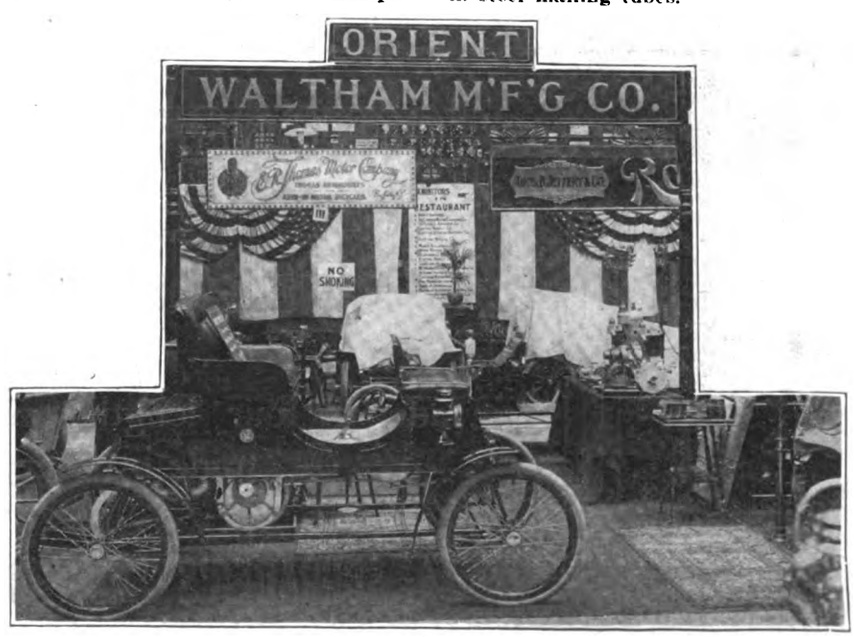
Souvenirs are not plentiful at the show, but a few of the exhibitors added a touch of interest by giving out trifles. The souvenir joke of the week developed on Wednesday, when the mail brought from Philadelphia a bundle of big envelopes addressed to different persons at the Garden. The outside of the envelopes indicated plainly that they contained advertising matter. There was one cancelled two-cent stamp on each envelope, and also a two-cent "due postage" stamp. After glancing at the envelope, many to whom they were addressed decided that they did not want them enough to pay the due postage and tossed them back to the youth at the Information Bureau, who had charge of distributing the mail in the Garden.

Inside of every one of the envelopes was a piece of cardboard with a publisher's advertisement on it beginning with the expression of "A Ten to One Shot." The souvenir gift consisted of an illustration of this catch phrase made by placing a bright new dime, fresh from the Philadelphia Mint, at one edge and a new one-cent coin at the other.

Now, the boy who was distributing the mail was a bright one, with money-making instinct. He knew what was inside the envelopes, because he had seen some of the recipients open theirs. He did not tell the nature of the contents to those who objected to the due postage, but just kept the whole missive. He thought that if the one addressed did not want their mail that it was all right for him to take it. Of course, he had to make good for the due postage, but he collected 137 envelopes with eleven cents in each, and after he paid the due postage had a net profit of $12.33. Then, alas, some one discovered what he was doing and forced him to disgorge.

A souvenir that is the source of much fun is a lead pencil given out by the Dixon Crucible Company. The leaded end is concealed in a cap, but at the other end it looks just like a sharpened pencil. Those who try to write with the business-like appearing end find that the "lead" is a thin piece of round, black rubber.

The Olds people are giving stickpins representing the Olds mobile. The Apple dynamo makers have distributed several barrels of nice eating apples, the Dixon concern gives away, besides the pencils mentioned, a little tin box containing five dice. The Shelby Steel Tube Co. hand out their catalogues in steel mailing tubes.



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Commentary

Well! Well! Well! I have just seen the first issue of that much touted "automobile daily," and I have wept. If, after having seen it, the gentlemen who "indorsed" it in advance have been able to hold back their tears they are, indeed, a lot of hard hearted wretches. Although I have said he is clever and that he is a wine buyer (did you notice the big champagne ad. in the "daily"?), and that he knew how to "jolly," the foreign father of the publication has, notwithstanding, I understand, described me as a "knocker." To prove that I'm nothing of the sort I've racked my brain for words fit to describe his "daily" effort, and when I term it a gold brick I am trying to pay it the highest possible compliment. I am only an ordinary American hack writer and a graduate from the bicycle school (hear Coughschwartz hiss!), unversed in the ways of Parisian and Hungarian journalism, but—excuse their tears. I'm too full of them for further utterance. I've never seen a "daily" like that one, and really it is too much for me. I don't wonder that Coughschwartz intends to buy wine for the newspaper crowd. I'd never stop buying it during the week if I had made so much "easy money" by selling such a gold brick to the automobile trade, and "stood next" to the champagne people themselves in the bargain.

* * *

Perhaps it is because I lack artistic perception, or it may be that I have not the peculiar appreciation of art, which causes its possessor to lose all idea of everything but color. I shall not attempt to say what the cause is, but the result of it all is that when I look at that fluffy haired, white garbed young woman who is shown on the poster announcing the Automobile Show it makes me shiver. Here is a poster supposititiously intended to advertise an exhibition of the very latest in mechanically propelled carriages; and how does it proceed to do it? A woman, about as inappropriately dressed for automobiling as she well could be, is shown seated in, and presumably driving, an automobile of a type which prevailed when Brooklyn was a field of motor exploitation from which was garnered the finest crop of expensive failure and costly experience the automobile or any other trade ever saw. At the price the manufacturers of genuine automobiles pay to make this Madison Square Garden exhibition thereof a gold mine for the owners of the Garden, and a few others, it seems to me that the manufacturers are entitled to something a little bit more in keeping with the times and the vehicles of to-day than this scarecrow of years ago. If the management and other beneficiaries cannot afford the expense of an up-to-date poster they can at least retire the one they have now used for three years, since it acts only to recall unpleasant recollections of those days, when an automobile was a thing for promoters to get rich from and purchasers to become bankrupted by.

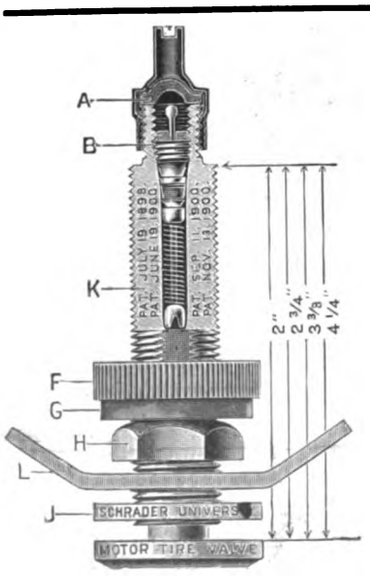
* * *

Did you ever hear of old Mr. Appearance Money? No? Well, you'll not very long remain unacquainted with him if you ever get behind the scenes in the racing game. This wily gentleman, Mr. A. P., originally made himself extremely prominent in the days when people broke their legs trying to be first in the rush to see bicycle races. The drawing cards in these races, the best known riders, were "amateurs"—God save the mark!—and therefore raced for sport alone. No money for them. Oh, no, indeed! But it wasn't long before the promoters of race meets found that the stars did not care to race on tracks where Mr. Appearance Money was never on hand to greet the best friends, trainers, managers or nearest relatives of the stars. Keep your eyes open, and you will see that this very winning individual is not dead; to the contrary, I have every reason to believe that he will cut quite as wide a swath in the racing of automobiles as he formerly did in the racing of bicycles, and in the not far distant future, either.

* * *

I am not, I think, betraying any confidence when I say that the metropolitan police do not like automobiles nor those who own them. In the first place, the automobile is the complete antithesis of everything the average policeman has been taught to look upon as "the real thing." The political boss, the ginmill keeper, the gambler, the sport of every kind, are one and all horse worshippers to a man. These people are to the policeman what the "smart set" are to the socially ambitious—a something to be studied, admired and, when possible, imitated. Naturally, then, policemen do not like automobilists, and the worst enemies of the police will not accuse them of having disguised their feelings, since the automobilist has been frequently and expensively made acquainted therewith. Originally this anti-automobile feeling on the part of the force was an abstract thing; that is to say, the average policeman had no personal grievance against the automobile—he simply reflected the feelings of those higher up. To-day all this has changed, and the policeman, from roundsman to inspector, has a personal hatred of the automobile. With the coming of Captain Piper from the superintendency of an automobile factory to the control of the police, the little love the police never had for the motor vehicle was turned to dislike. Bad as this was, worse was at hand. General Greene was placed at the head of the police, and what is the first thing he does? Jumps into a big semi-racing automobile and rushes around the town, finding police everywhere unprepared for his appearance. Actually inspected six hundred saloons in one Sunday afternoon, all because of the speed of that devilish automobile in which he rode! Could any policeman love an automobile after that? Certainly not! Is there any exception to this rule of dislike? Not a single one.

THE COMMENTATOR.



Schrader Universal Valve,

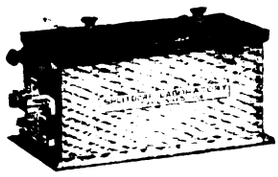
(Trademark Registered April 30, 1895.)

SIMPLE AND ABSOLUTELY AIR TIGHT.

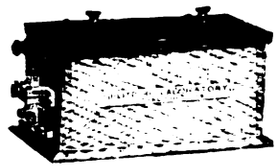
Made in four lengths as shown, and supplied to the trade by every tire manufacturer.

A. SCHRADER'S SON, 30 & 32 Rose Street, New York.

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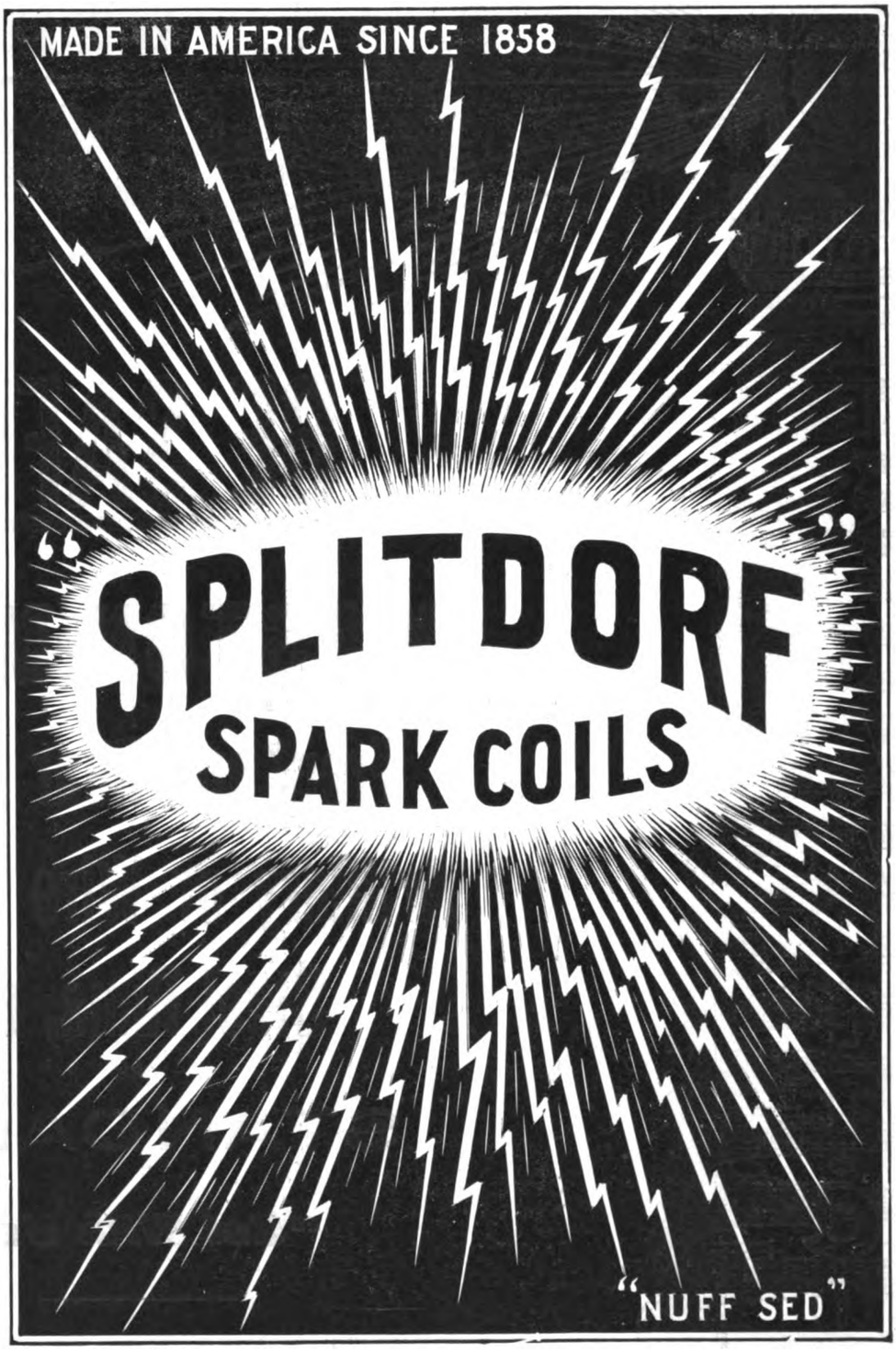








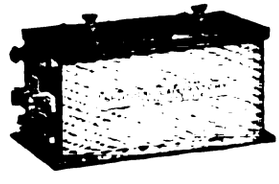




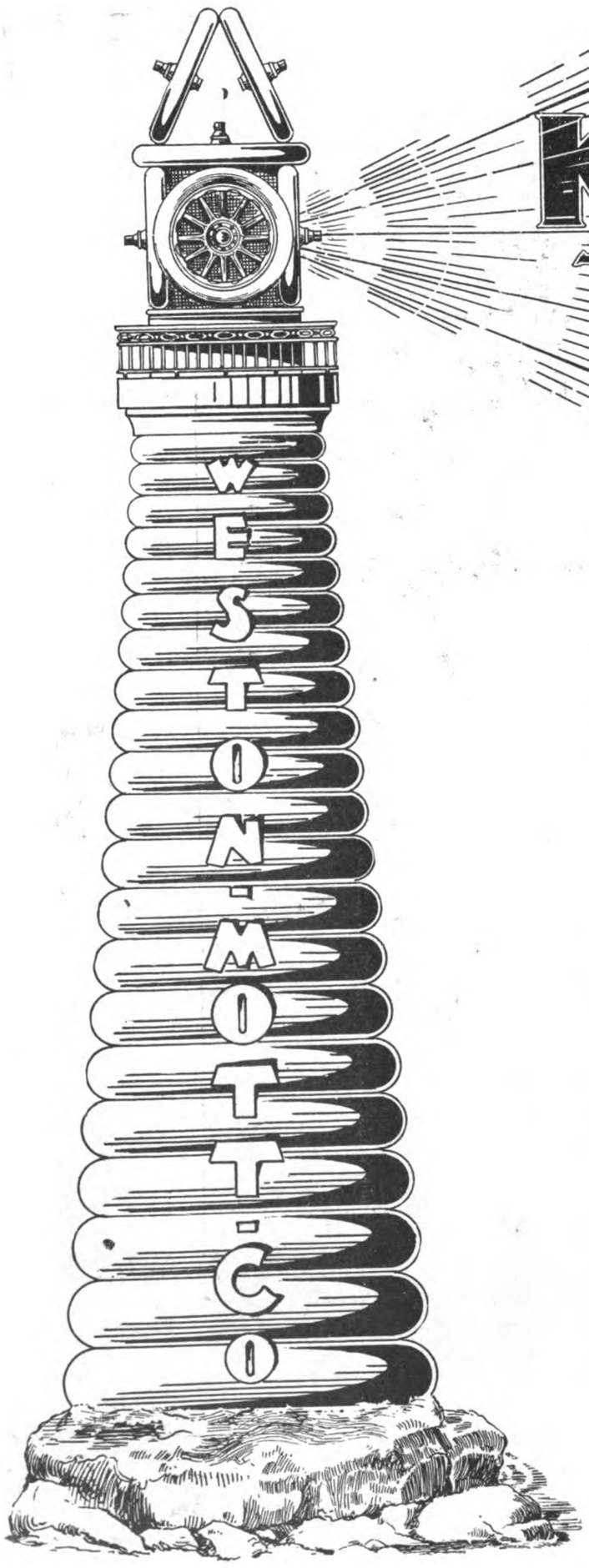


C. F. SPLITDORF

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BE SAFE!

WESTON-MOTT

Front and Rear Axles,

Artillery or Wire Wheels,

Steel Rims, etc.,

ARE

STANDARD.

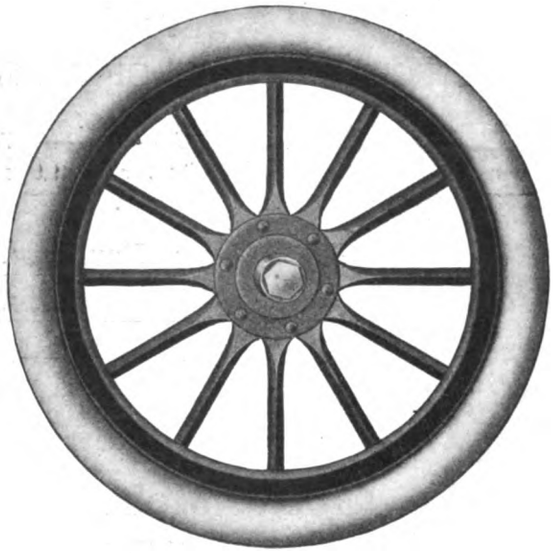
"Get With Us."

Weston-Mott Co.

UTICA. N. Y.

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WOOD



OR

WIRE,



IT'S ALL THE SAME TO US.

We can supply either or both and the kind we make, whether wood wheels or wire ones, are the kind to be proud of.

We'll be well pleased to receive an opportunity to particularize and to submit quotations.

WESTON-MOTT CO., Utica, N. Y.

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"Mobile"

DEVELOPED TO THE HIGHEST STATE OF PERFECTION

Through more then a Million Miles of Experience, including single journeys of a thousand miles over such rough country as that from Seattle to San Francisco, and the carrying of more than 50,000 passengers by a single Company using Rapid Transit Vehicles.

A $550 "Mobile" for Two Persons.

A $1,080 Delivery Wagon for Merchants.

Twenty-four styles of carriages, including coupé, touring wagons, Victoria runabouts, omnibuses, many styles of delivery wagons, surreys, etc.

Do Not Fail to Send for The 1903 "Mobile" Catalogue

GOOD AGENTS WANTED 1903.

THE "MOBILE" COMPAMY OF AMERICA.

Executive Offices, Sales and Storage Rooms:
"MOBILE" BUILDING, BROADWAY & 54th ST.,
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Factory:
PHILIPSE MANOR STATION,
N. Y. C. & H. R. R. ON-THE-HUDSON.

Branches: BOSTON, CHICAGO, DENVER, SAN FRANCISCO, LOS ANGELES.

A $550 "Mobile" Think of it!!

THE Locomobile COMPANY

STEAM TONNEAU.

We are disappointed in not being able to exhibit our steam tonneau at the New York Show, but photographs can be seen there and the mechanism of the car explained to all those interested in the same. Our factory is now working on the parts for these cars and we will be able to make deliveries this Spring. We will be very much pleased to furnish by mail specifications and details of this new model.

In writing, state if you are a Locomobile owner, and, if so, the style and number of the car you are using.

THE LOCOMOBILE COMPANY OF AMERICA,

OFFICES: 7 East 42nd Street, NEW YORK.

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DE DION-BOUTON
Motors and Automobiles

THE MUNICIPAL COUNCIL PRIZE,

THE HIGHEST AWARD OF THE PARIS SHOW HAS BEEN GIVEN TO THE

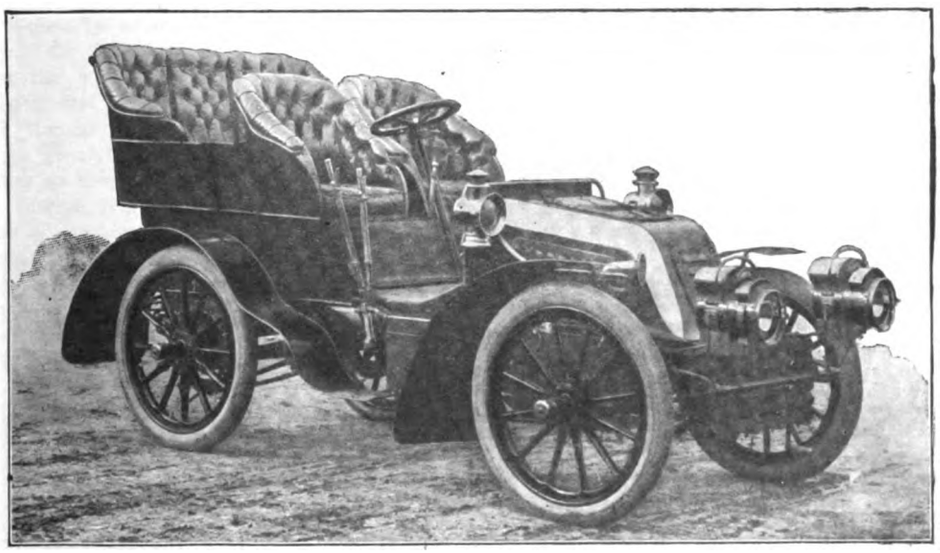
DE DION-BOUTON COMPANY,

WHICH THUS REMAINS KING OF THE INDUSTRY IT CREATED.

1903 MODELS NOW READY.

KENNETH A. SKINNER, Sole U. S. Agent, 179 Clarendon St., Boston, Mass.

THE Locomobile COMPANY



THE 16 H. P LOCOMOBILE GASOLENE TONNEAU.

ORDERS have been coming in at such an astonishing rate that we strongly advise all prospective customers to order at once. DO IT NOW. A delay in ordering means a delay in delivery.

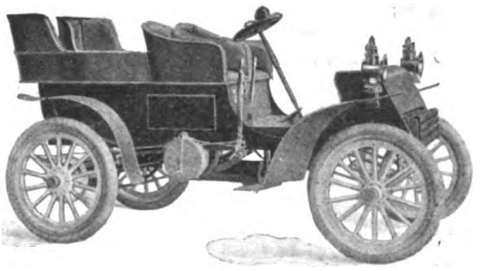
THE LOCOMOBILE COMPANY OF AMERICA, Offices: 7 East 42nd Street, New York.

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"PACKARD"

Stands for Perfect Construction, Durability, Comfort in Riding, Style and Finish.

"Ask the Man Who Owns One."



PRICE, $2,500.

IT HAS WON THE HIGHEST POSITION OF HONOR IN ALL THESE LEADING CONTESTS.

400 Miles—New York-Rochester. 100 Miles—Long Island non-stop. 100 Miles—A. C. A. non-stop.
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WRITE FOR NEW CATALOG.

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NEW YORK, Eastern Department, 317 W. 59th St.
PHILADELPHIA, Wm. F. Rudolph, 302 N. Broad St
BOSTON, H. B. SHATTUCK & SON, 239 Columbus Ave.
CHICAGO, Pardee & Company, 1404 Michigan Boulevard.
LOS ANGELES, Norman W. Church, 439 S. Main St.
SAN FRANCISCO, H. B. Larzalere. 1814 Market St.

THE SHELBY MOTOR CAR CO.



MANUFACTURERS OF

The Shelby

10 H. P. Combination Two and Four Passenger Car. 20 H. P. Touring Car. 20 H. P. Light Delivery Car.

Our Exhibit at the New York Show will be found in the **"Basement" Space 4.**

From a standpoint of **Quality** our Exhibit should be located on the **"Garden Roof."** Come **DOWN** and see our Exhibit while attending the show, or write us for Catalogue and particulars. Address Department "F."

THE SHELBY MOTOR CAR CO., Shelby,, Ohio.

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MECHANICAL VALVES

Their Advantages and Disadvantages Exhaustively Dissected and Discussed.

"The craze of the moment is undoubtedly the mechanically operated inlet valve, and the ranks of motorists are pretty evenly divided into two camps—those who support the re-introduction of this system—tried in the early days of motoring, and discarded—and those who believe in the automatic opening of the valve by suction," says that eminently practical journal, the Motor News.

"Before discussing the advantages and disadvantages of both systems, there are two fallacies which we would like to dispel. The Mercedes proved itself last season to be the most noiseless car on the market, and the public at once jumped to the conclusion that this was wholly due to the mechanically-operated inlet valve.

It has been urged that in the case of the ordinary style the suction is not sufficient to open the valves when the engine is working at slow speed. Consequently, when little work is required, the automatic throttle is brought into operation. At one moment the valves remain shut and no gas enters, the next moment they open and a pretty full charge is admitted with the result that the engine runs with a series of spurts, and much noise is caused. This theory is incorrect. Even at a slow pace the inlet valve must open save in exceptional cases when stuck down by a gummy deposit, which, of course, cannot occur after the engine has been once started.

"The cause of the change is really to be found in the carburetter. The old type is set to give a perfect mixture at normal speed when there is a powerful suction, and consequently a properly proportioned mixture. As the speed drops the rush of air past the spraying nozzle decreases, consequently the supply of vapor becomes less, and the proportions of air entering from above greater, until at last the mixture becomes so weak that it is non-explosive, and the engine will stop altogether unless the pace is accelerated.

"In the Mercedes carburetter, the secondary air inlet supply is controlled off the governor so that as the speed of the engine drops this air inlet is closed. The suction then acts directly on the spray and draws up a supply of petrol in proportion to the supply of air, thus giving an explosive mixture even when the amount reaching the combustion chamber is greatly decreased. No explosions, therefore, are missed, and the engine can be run at a slow, and at the same time, uniform pace with the result that noise is reduced to a minimum.

"We would advance the following evidence of the truth of this contention. The Panhard and Levassor Co. still use the old type of inlet valves in all their cars under 16 horse power, but in the Krebs carburetter have introduced the principle which was adopted in the Mercedes, and with exactly the same result. The engine now runs silently.

"Then again, we tested the matter by a simple experiment. Taking an old pattern Daimler, we reduced the speed of the engine gradually until finally it came to a standstill. We then half closed the apertures to the air cylinder, and were able to start the engine with the acelerator in the same position which it occupied before it came to a standstill, and after that further reduced the speed without causing a stoppage.

"Most motorists have found that partly closing the air inlet facilitates starting. The cause is the same. The slow pace produced by the starting handle gives a vitiated mixture which will not explode, and to remedy this the air inlet is partly closed until the engine gets going.

"The other fallacy arises from the fact that the piston speed is greater than the speed of the valves, and wrong conclusions are drawn therefrom. It is urged—(1) that as the inlet valve does not open until the piston has begun to descend, consequently such a big charge is not admitted as in the case of the mechanically operated inlet valve, which opens exactly at the right moment. (2) That as the spring of the inlet valve is not sufficiently strong to close it before the piston begins to ascend on the compression stroke, consequently part of the charge is forced back through the valve. It is therefore concluded that the mechanically operated inlet valve gives much more power than the ordinary style.

"And now to deal with (1). It must be borne in mind that when the piston begins to descend the suction is very slight and consequently even if the valve did open at once the amount of mixture drawn in would be small. Also, owing to the slow speed of the engine the mixture (except the new carburetter is fitted, as in the case of the Panhard) would consist mostly of air. With the automatic valve the suction when it comes is sudden and strong, and from the moment the valve opens the maximum quantity of perfectly proportioned mixture is drawn in. Consequently on this score the advantage in favor of the mechanically operated valve is trifling.

"As regards No. 2, the piston certainly begins the compression stroke before the inlet valve closes, but in this connection there are two facts which must be boren in mind. First the compression at this point is almost inappreciable, and secondly, there is still a strong rush of mixture through the induction pipe which offers resistance to the effort of the semi-compressed mixture to escape for the minute fraction of a second which it takes the inlet valve to close in. Whether a minute portion of the mixture does escape from the combustion chamber or not we cannot say, but these theories are backed up by practical experience, for leading firms in the trade have tested the

H. B. SHATTUCK & SON,

BOSTON, MASS.

Distributors of

Oldsmobile,
Packard,
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WE HAVE CONSTANTLY ON HAND CHOICE BARGAINS IN SECOND-HAND MACHINES.

A full line of standard French and American accessories carried in stock.

STATE YOUR REQUIREMENTS. WE CAN MEET THEM, IF ANYBODY CAN.

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same engines with both systems, and the difference in the power generated was almost inappreciable, except in the case of large engines. It is for this reason that Messrs. Panhard & Levassor only fit the mechanically operated valves in cars fitted with engines of 16 horse power and upward. There may be a slight advantage in favor of the mechanically opened valve, with smaller engines, especially if the Mercedes type of carburetter is fitted, but the advantage is certainly not great.

"Having now pointed out these two fallacies, we shall proceed to deal with the genuine advantages and disadvantages of which there is no question.

"Starting Facilitated.—Difficulty is often experienced in starting through a gummy valve sticking to its seating, so that no charge can be admitted, or (in the old type of carburetter) even if the valve does open, but tardily, such an attenuated charge is admitted that is not explosive. With the mechanically operated inlet valve, the valve must open, no matter how slowly the handle is turned, and with the new carburetter the mixture must be correct. Consequently, the engine starts at once.

"Certainty of Action.—In the old style the valve opens sluggishly if the valve seating, valve stems, or valve stem guides are fouled with gummy matter. The mechanically operated valve must open at the correct moment under every circumstance. Then again in the old style the tension of the valve springs must be kept correct and must be equal, or nearly so, in all the cylinders. If the spring is too strong, the valve will open too late; if it is too weak, it will shut too slowly. A compromise has to be arrived at which is not absolutely correct either for opening or shutting. The new system gets over this trouble.

"Then again, the springs are liable to break or lose their temper through an overheated engine, so that the tension becomes incorrect. In fact, in the old style, the springs require a good deal of attention, and often give trouble.

"Simplicity.—From a constructional point of view there is increased complication, but for the beginner or man who is not expert, the mechanically operated valve will simplify matters in another direction. There is a good deal of skill required to keep the valve springs in the old style of correct tension. With the mechanically operated valves no adjustments are necessary, neither are there any trivial derangements. If a failure does occur it will be a serious matter which cannot be set right on the roadside.

"Additional complication from a constructional point of view and additional cost of manufacture are almost the only serious defects. It means an extra cam shaft with additional gear wheels, wearing parts in the engine, joints and connections, and increased difficulty in getting at the valves. Even in the best made cars the exhaust valve cam shaft may cause trouble of a serious nature. The addition of another cam shaft just doubles this risk.

"So much for the general principles bearing on the matter. The size of the engine, however, is a factor which must be taken into consideration, and this we now propose to examine.

"Earlier in this article we mentioned that experiments had shown that the difference in power gained from the mechanically operated inlet valves was almost inappreciable in the case of cars of comparatively small horse power. The theory is simple. In the small cylinder there is much less compression space. The least downward move of the piston causes a very considerable vacuum pressure which opens the inlet valve almost at once, and as the space to be filled is small, it is filled almost instantly.

"In the larger cylinder, on the other hand, the compression space is naturally very much greater, and the downward motion of the piston does not expand the large quantity of exhaust gas or air in the combustion chamber, enough to cause a vacuum sufficient to open the valve until the piston has descended further on its downward stroke, than in the case of the smaller cylinder.

"Then again, in the case of the large cylinder, the valves are necessarily very heavy, and require a powerful spring to shut them quickly enough, and on this account they open tardily. In the small cylinder the valves are so light that a very light spring will close them quickly. Messrs. S. F. Edge & Co. who do not believe in the mechanically operated inlet valve, have got over this difficulty, in the Napier car, by fitting a three-port valve, and consequently very light springs. Thus the valve opens almost at once.

"Finally, in the small cylinder the suction is so quick and so strong that it induces very great motion of gas in the feed pipe, which has a greater tendency to continue to force and compress gas into the cylinder, even after the piston has begun its compression stroke, than in the case of the large cylinder. In the latter the picton sucks more slowly, and does not generate the same force in the gas of the feed pipe.

"It seems, therefore, to us that while a mechanically-operated inlet valve is undoubtedly advantageous in the large cars, the question still remains to be decided whether or not, in the case of the smaller cars, the advantages counterbalance the drawbacks. This time alone will tell."

The Week's Exports.

British possessions in Africa—1 case motor vehicle and material, $956.

British Australia—1 case motor vehicle, $450.

British East Indies—1 case motor vehicle, $160.

British West Indies—2 cases motor vehicles and parts, $1,053.

China—2 cases motor vehicles and material, $1,910.

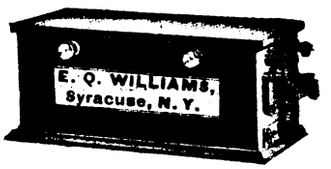
Liverpool—7 cases motor vehicles, $9,800.

Mexico—1 case motor vehicle, $80.

Malaga—1 case motor vehicle, $500.

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None so Good. None so Cheap.

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1¼ H. P., Air Cooled for Bicycles, also all Accessories for Motor Cycles

2¾ H. P., Air or Water Cooled,

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10 H. P., Double Cylinder, Water Cooled.

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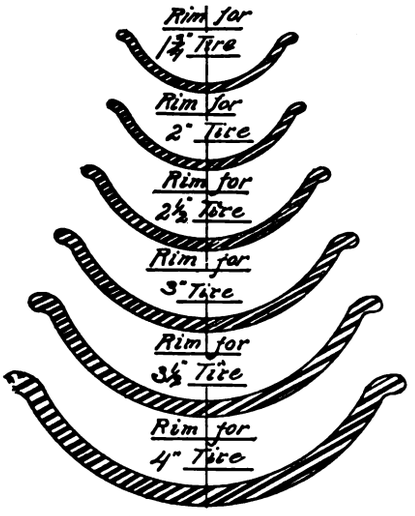
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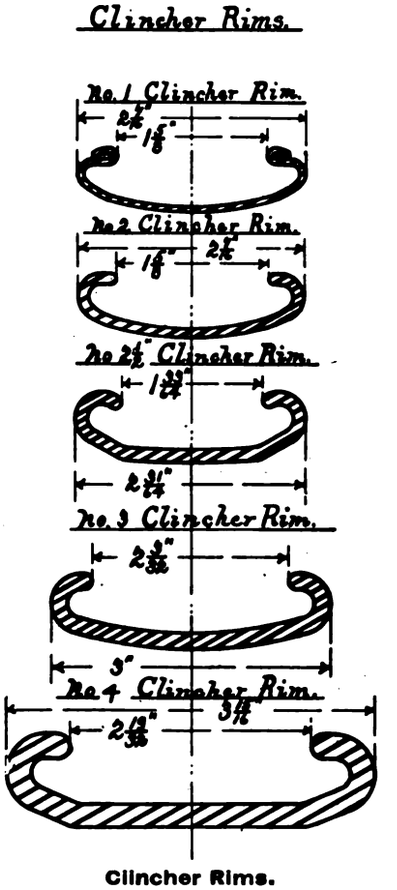
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"TRUE AS STEEL"

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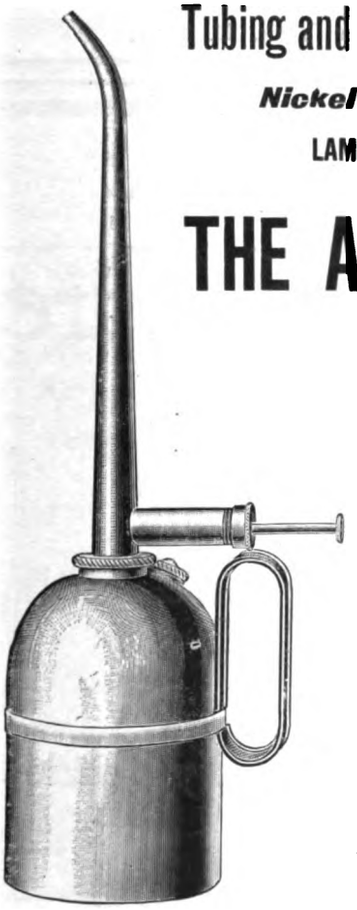
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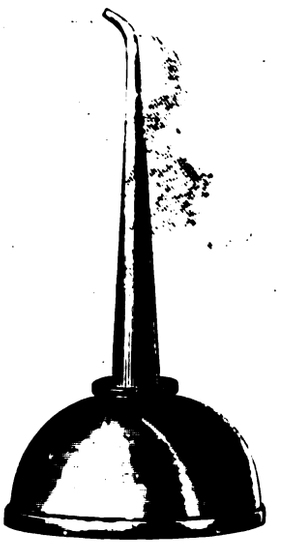
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Automobile Cans.

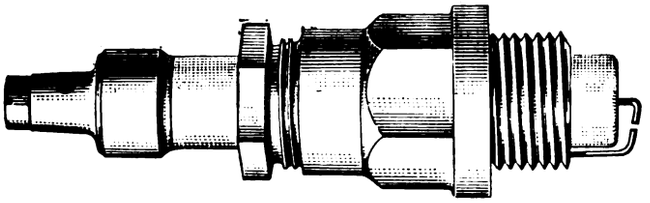
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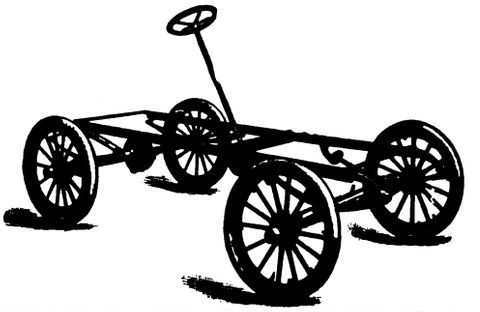
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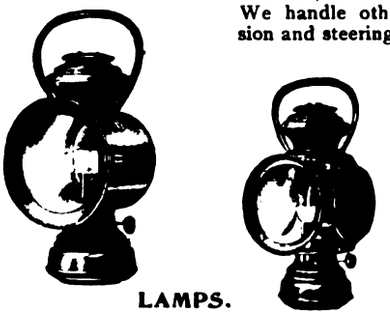
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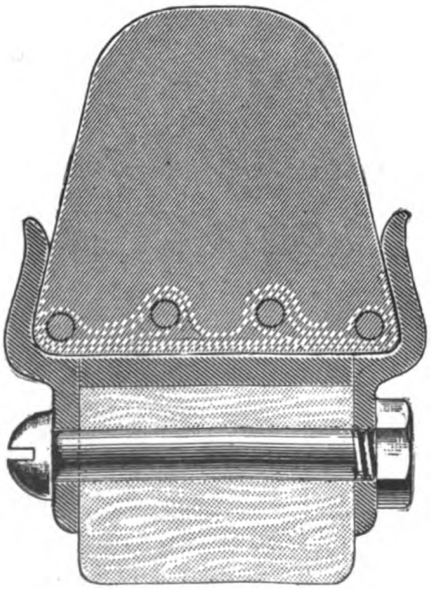
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In use three years, and has proven its superior worth.

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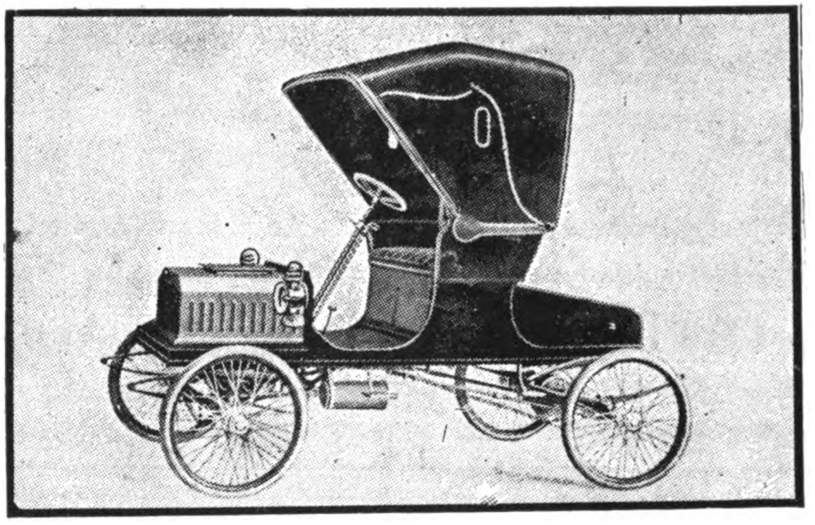
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$1250—TOURING CARS—$1250



The Biggest Value Ever Offered for the Money.

The Runabout is equipped with an 8 horse power, 2 Cylinder Vertical Motor, is wheel steering and up-to-date in every respect.

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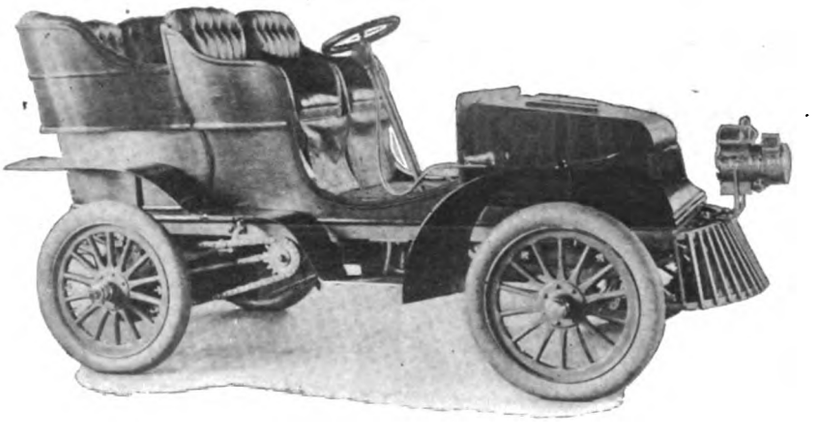
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First Steam Tonneau put on American Market.

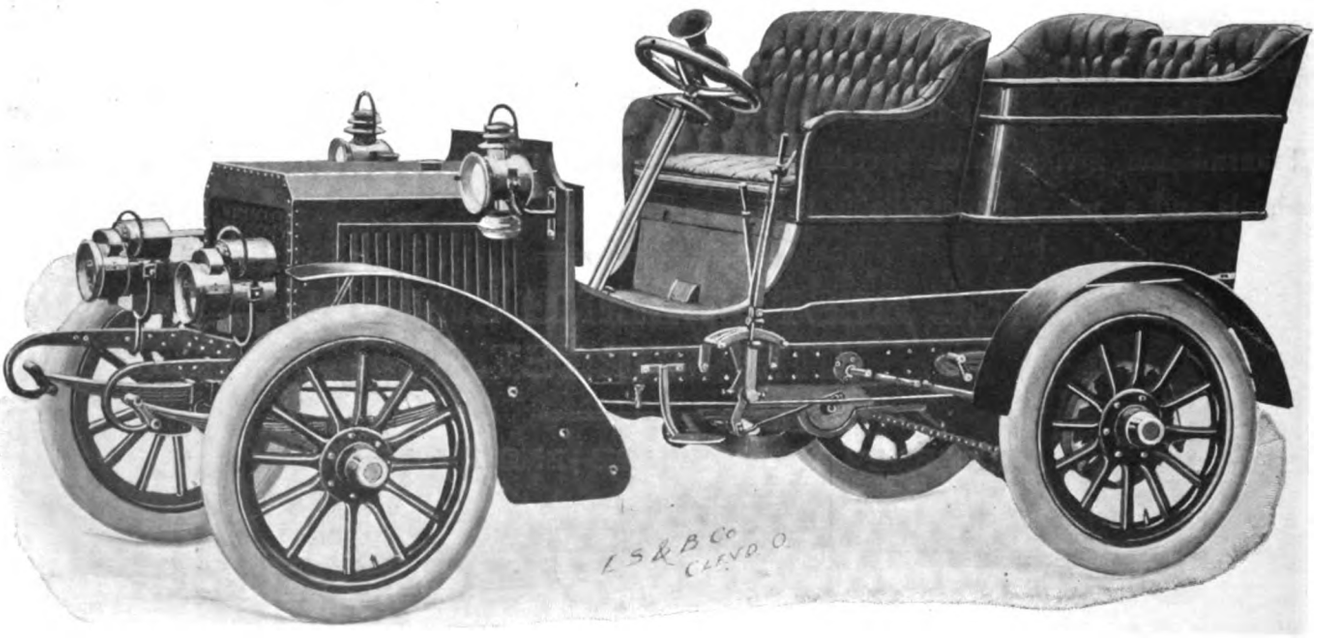
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THE STEARNS CAR

Received a lot of very favorable comments at the show.



The style and general design is right. The motor is powerful, with a perfect throttle, and runs silemtly aud wtth no vibration. The attachments on the dsah and controls at the wheel are good points, too. The small tube radiator is ahead of the time, and considering all things, **STEARNS CARS are worth more than they cost.**

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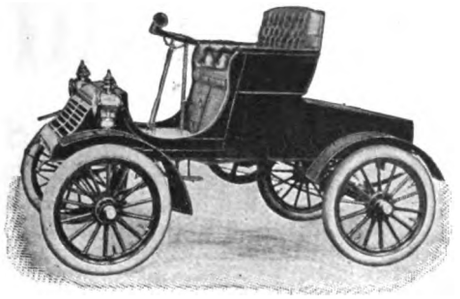
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Why not look into the matter, and get the most solid comfort possible at a minimum cost? You wont regret it. The best material money can buy goes into the construction of this GUARANTEED SUCCESS.

You will be interested in terms to agents. Write for catalogue.

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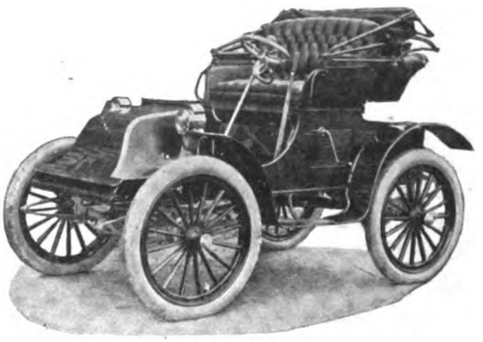
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is unique. It is its own type. It has proved the best for American roads, better than foreign types—better than the so-called "American type" of motor car. It is the oldest make in America—one of the oldest in the world—the most thoroughly developed.



It is interesting to note that the 1903 "Improvements" of the Paris Show have all been features of the Haynes-Apperson Car for years. Our throttle control and sparker with magneto is superior today to the best foreign practice; also our band clutch, free from end-thrust.

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Runabout, $1200; Phaeton, $1500; Surrey, $1800.

TONNEAU—READY BY SPRING—PARTICULARS LATER.

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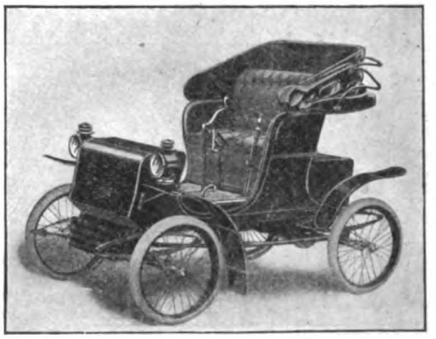
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GASOLENE AUTOMOBILE

The Most Popular Runabout on the Market.



It starts from the seat. It has a two cylinder, 7 H. P. Motor which runs without noise or vibration.

IT SEATS TWO OR FOUR PASSENGERS.

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Speed—Reliability—Hill Climbing.

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Darracq Car

1903 MODEL.

20 and 24 horse power.
Embraces every modern feature heralded from the Paris Show.
4 Cylinders, Honeycomb Radiator.
Mechanical Operation of Valves.
Automatic Lubrication.
Noiseless and without Vibration.
Motor starting from seat.
Luxuriously Appointed.
Large Wheels, Enlarged Seating Capacity.
An Ideal Motor Car.
Will receive first shipment about January 20, 1903.

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The "Bann-Auto" Wheel

A PERFECT AUTOMOBILE WHEEL.

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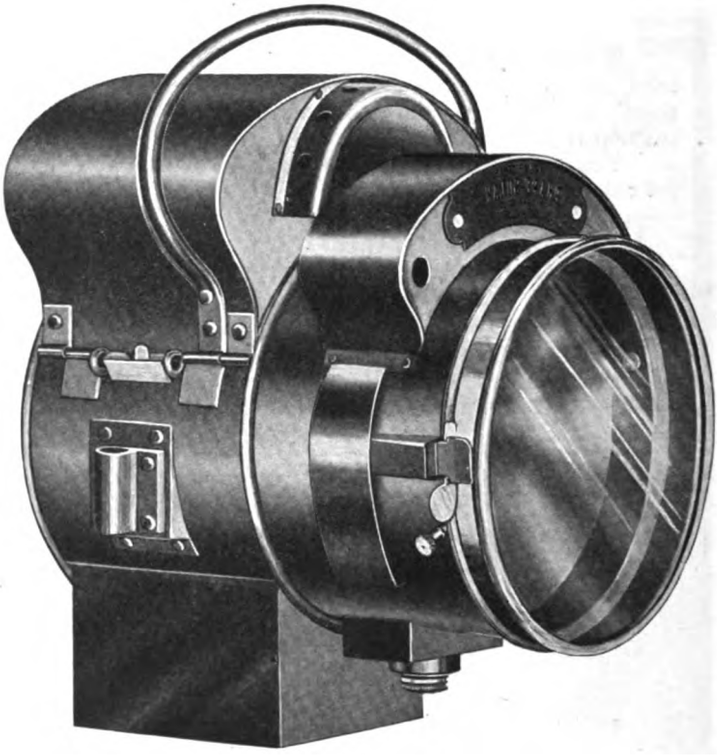
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Motor = Lamps

Show the Way



Phare Solar No. 1. 1160 Candle Power.

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The success of the

ELMORE TWO-CYCLE MOTOR

as applied to the Elmore Runabouts and Touring Cars

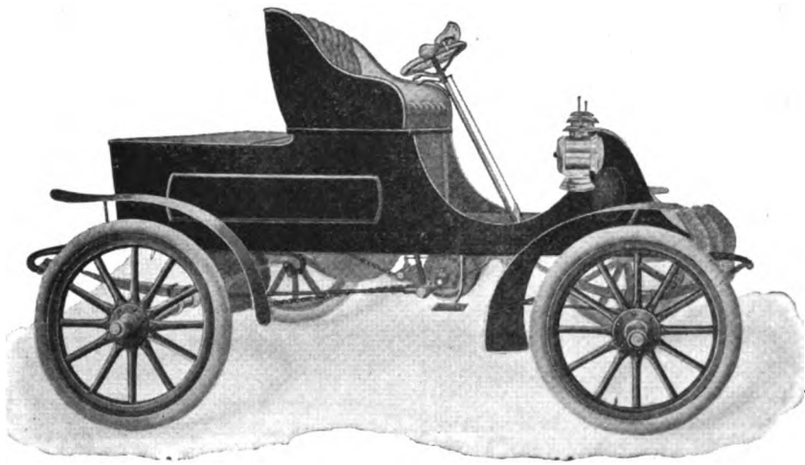
HAS LEFT THE SCEPTICS NOT A LEG TO STAND ON.

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7 H. P.

1200 POUNDS.

$800.



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$1400.

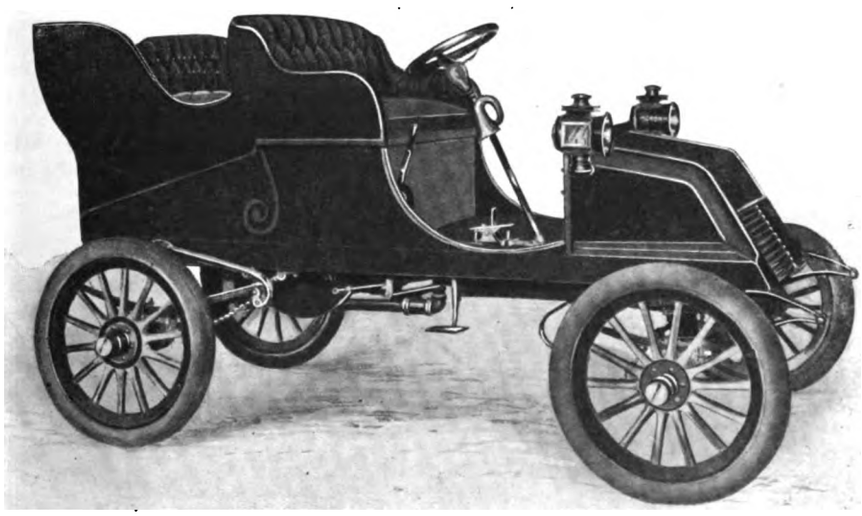
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While the Show proves Complication in Motor Cars is on the increase, the Elmore stands out as the one in which simplicity and understandability rules. It bristles with exclusive features. The two-cycle motor is but one of them. We'll be glad to send you full particulars.

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Naturally Takes High Rank

"THE GENERAL"



There was no car at the New York Show that attracted more favorable attention. Small wonder; the combination of quality and price is unequalled.

Here are a few specifications: 8 H. P. double cylinder engine, mechanical lubrication requiring no attention.

Built to go anywhere, and does it. No vibration and no trouble anywhere.

Price $900 and immediate delivery. Agents now being appointed.

THE GENERAL AUTOMOBILE & MFG. CO., CLEVELAND, OHIO.

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Chicago Automobile Show

COLISEUM, FEBRUARY 14-21.

REDUCED RAILROAD RATES.

The Central Passenger Association
Western Passenger Association
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have granted reduced rates an account of the Good Roads Convention of the National Association of Automobile Manufacturers, to be held at the Coliseum, Chicago, during the Chicago Automobile Show, Feb. 14 to 21, 1903,

These associations cover all the territory between Cheyenne, Wyo., (including all Points in Colorado) and the Atlantic coast.

Note These Instructions Carefully.

On purchasing ticket for the trip to Chicago, ask the ticket agent for a certificate **on account of the Good Roads Convention of the National Association of Automobile Manufacturers.**

On your arrival at the Coliseum present it at once to the railroad agent who will be in attendance from Monday to Saturday. He will certify that you have been in attendance, but it is necessary for him to know that there are at least 100 holders of certificates, hence the necessity of delivering them to him immediately on arrival.

Your certificate, when presented at the depot, will entitle you to buy your return ticket at one-third of the regular fare,

Tickets for return journeys will be furnished only on certificates dated not more than three days before the opening of the convention, nor more than two days after the first day of the convention, and presented within three days after convention closes. Sunday will not be reckoned as one of the three days either before the opening date or after the closing date, and all return tickets will be for continuous passage.

EVERY PROMINENT MAKER WILL EXHIBIT.

Morning Sessions Free to the Trade.

SAMUEL A. MILES, Mgr., Monon Bldg., CHICAGO.

AUTOMOBILE SHOW, CHICAGO, FEBRUARY 14-21.
GOOD ROADS CONVENTION, CHICAGO, FEBRUARY 14-21.
BICYCLE JOBBERS ASSOCIATION MEETING, CHICAGO, FEBRUARY 14-21.

To secure the greatest degree of

COMFORT IN TRAVEL

arrange to take one of the fast trains of the

MICHIGAN CENTRAL

THE NIAGARA FALLS ROUTE

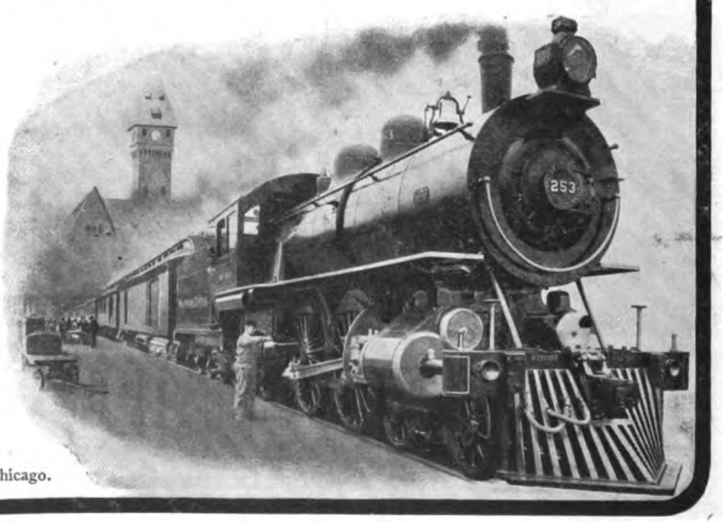
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AMERICAN AUTOMATIC SPARK COIL

Operates Automatically as either a Vibrator or Plain Coil.

The "American" System of Ignition

LEADS THE WORLD.

You take no chances.



American Pocket Ammeter.

NOT A TOY.

Gives output of batteries CORRECTLY.

AMERICAN DOUBLE INSULATED MICA CORED SPARK PLUG

And a full line of up-to-date jump spark ignition apparatus.

If you desire the best, write for our catalogue. See our exhibit at New York Automobile Show Basement, Space No. 5.

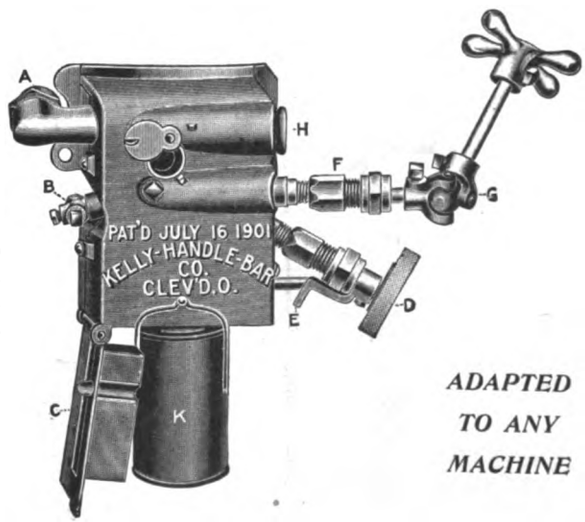
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THE NEW

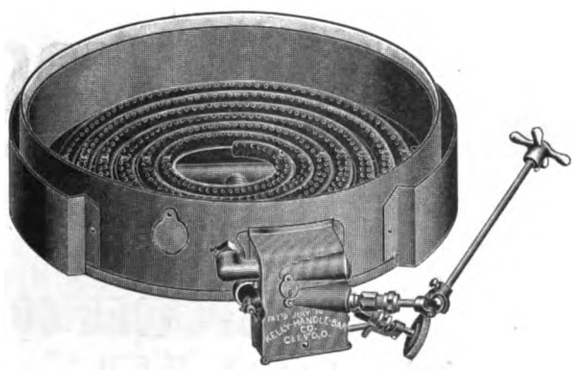
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No Steam Car is complete without one. Does away with drip cups and all annoyances. Perfected in every way and always reliable. Strongly made with all connections outside. Easily adjusted. No flaring or flashing in lighting, even in the strongest wind. Main fire controlled at seat. Compact and neat in appearance and enclosed in aluminum case.



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The New One-Piece Steel Tubular Burner

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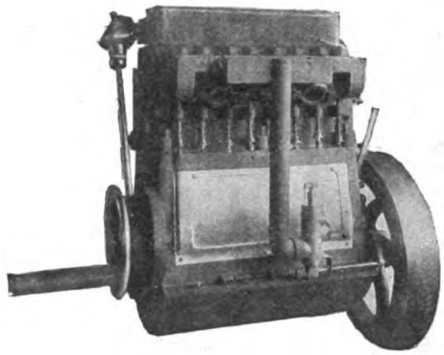
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Gasolene Motors

FOR TONNEAU AND EVERY OTHER STYLE VEHICLE.



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BUFFALO GASOLENE MOTOR CO.,

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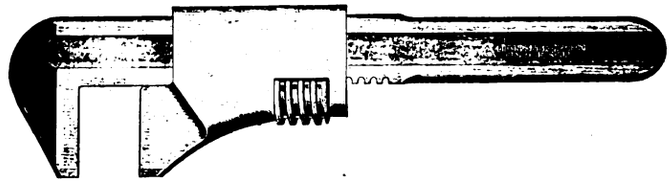
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No. 8 Long Lane, Aldersgate Street, LONDON, E. C

CONTRACTORS TO H. M. GOVERNMENT.

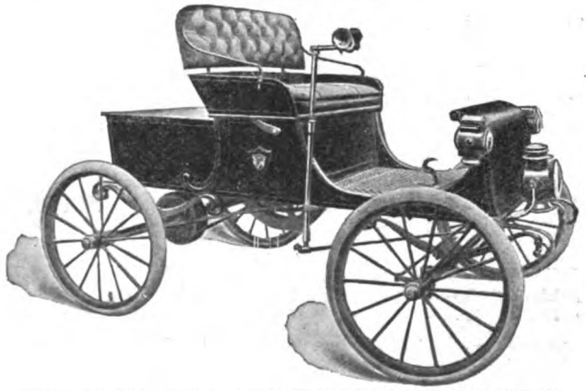
Dealers Can Control the Business

in their towns when they handle

The Spaulding

It puts money in your pocket and leaves more in those of your customers' than any automobile you can sell them. You are both happy.

Happiness is catching; that's why SPAULDING owners have lots of friends who increase the demand.

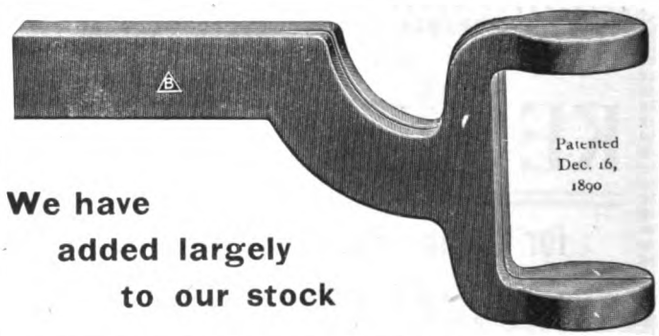


$700 THE PRICE. QUICK SALES THE RESULT.

YOU WANT TO KNOW MORE. WE WANT TO TELL YOU MORE WRITE US RIGHT NOW.

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OF EVERY DESCRIPTION

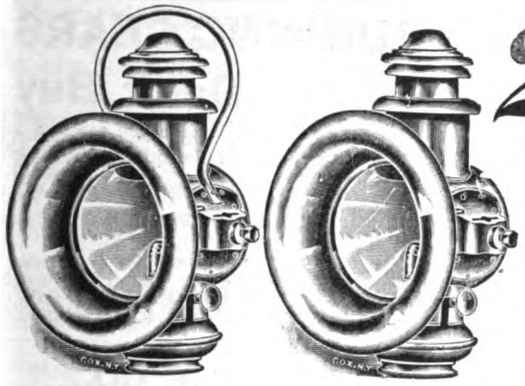
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THE BILLINGS & SPENCER CO.,

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20th Century

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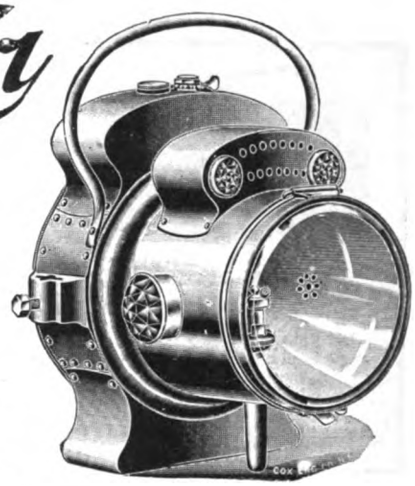
AUTOMOBILE

SIDE LIGHTS—TAIL LIGHTS

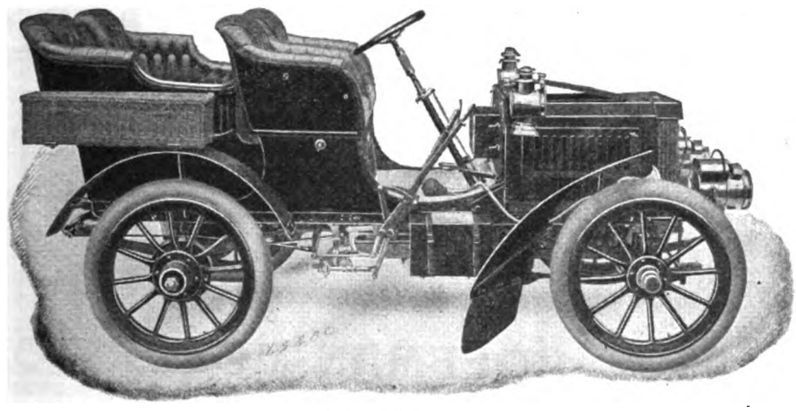
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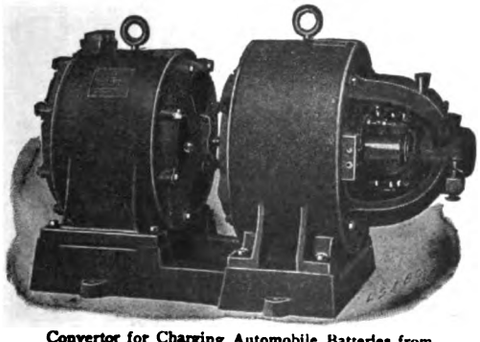
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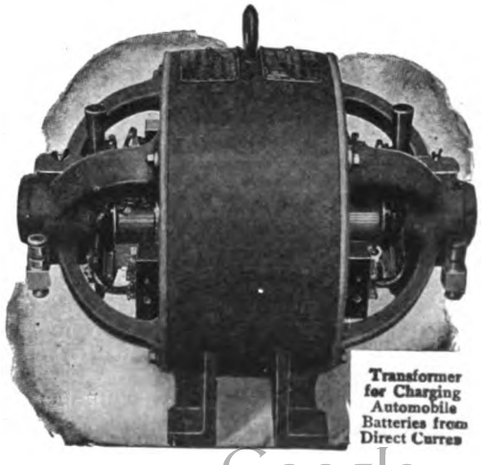
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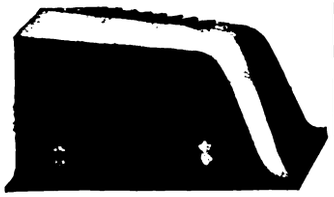


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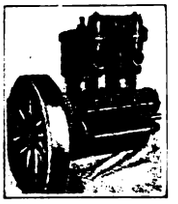
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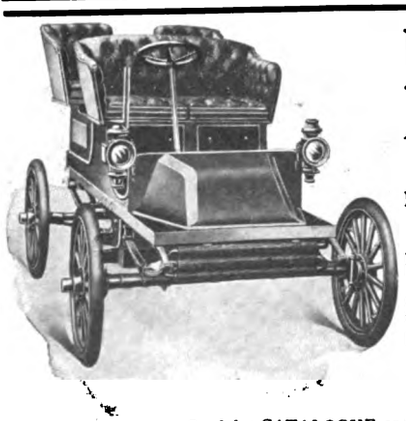
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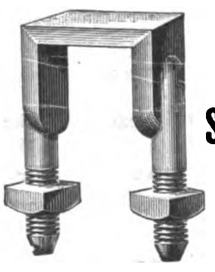
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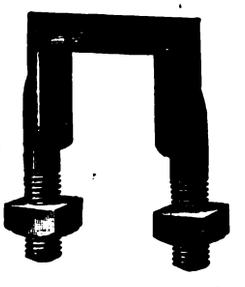
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The Week's Patents.

718,072. Running Gear for Vehicles. Alfred S. Baldwin, Syracuse, N. Y. Filed November 23, 1901. Serial No. 83,450. (No model.)

Claim—1. In a running gear for vehicles, front and rear axles supporting trusses and reach bars connecting the same, the rear truss comprising separated lengthwise bars and separate tie bars uniting the ends of the lengthwise bars, said tie bars having substantially central openings and annular bearings, separate sleeves secured in the openings, in combination with separate axles journaled in the bearings and having their inner ends provided with a driving member, and removable wheel supporting flanges secured to the outer ends.

718,076. Battery. Louis Begeman, Cedar Falls, Iowa. Filed January 7, 1902. Serial No. 88,753. (No model.)

Claim—1. An electric battery comprising in combination a containing vessel adapted to form a positive pole electrode, a depolarizing agent forming a lining for said cell, a lining of wire gauze or netting in the interstices or meshes of which said depolarizing agent is partially embedded and supported, a protecting shield covering said gauze or netting, and a negative pole electrode situated within said vessel.

718,096. Vehicle Wheel. Lewis J. Cook, Battle Creek, Mich. Filed September 22, 1902. Serial No. 124,311. (No model.)

Claim—1. In a vehicle wheel, a hub sleeve having external right and left threaded portions near each end, a pair of spoke collars engaging therewith provided with crotch logs and set screws, a felly provided with spoke thimbles and end sleeves, each sleeve embracing a spoke thimble riveted within the same, a tire provided with an inside rib engaging a corresponding groove in the felly, together with a set of spokes having lugs, collars and teats, the whole made and arranged substantially as shown and described.

718,097. Motor Vehicle. Charles Crompton, Worcester, Mass. Filed September 25, 1901. Renewed December 3, 1902. Serial No. 133,778. (No model.)

Claim—1. A motor vehicle including a driven axle, a vertical driving shaft connected thereto and having a universal joint, a driving gear mounted in bearings rigid with the vehicle body, said shaft extending through said gear, a flexible connection between the driving gear and the driving shaft, and a motor carried by the body and connected to the driving gear.

718,131. Muffler for Gas or Gasolene Engines. Joseph F. Kurtis, Springfield, and Herman F. Miller, Dayton, Ohio, assignors to George J. Ihrig and Ernest C. Ihrig, Springfield, Ohio. Filed July 21, 1902. Serial No. 116,329. (No model.)

Claim—1. A muffler comprising a receiving head adapted to be connected with the exhaust pipe and provided with internal baffle plates and with means for regulating the admission of the exhaust gases, a discharge head also provided with internal baffle plates, a plurality of pipes connecting the receiving and discharge heads, and means for regulating the escape of the exhaust gases after passing through the discharge head, substantially as described.

718,161. Motor Vehicle. Oscar H. Schildback, South Bend, Ind. Filed March 28, 1902. Serial No. 100,496. (No model.)

Claim—1. In a motor vehicle, the combination with the body portion having upon its under side a motor support, said motor support consisting of parallel bars grooved upon their outer sides, and a motor the upper end portions of which are provided with lugs or projections adapted to be adjustably and removably mounted in the said grooves of the parallel bars.

718,213. Motor Vehicle. William Norris, Preston, England, assignor to T. Coulthard & Co., Limited, Preston, England. Filed July 22, 1902. Serial No. 116,517. (No model.)

Claim—1. In a steam propelled road vehicle, a front platform of the vehicle, a boiler carried thereon, a fuel bunker immediately in front of the boiler adapted to form a buffer in case of a collision, and a driver's seat, steering wheel and controlling lever at one side of the boiler, substantially as and for the purpose set forth.

718,231. Motor Vehicle. William E. Whitbread, Godalming, England, assignor of one-half to Robert Corkling, London, N. W., England. Filed June 7, 1902. Serial No. 110,650. (No model.)

Claim—1. In a vehicle the combination of a frame carrying a leading wheel and two following wheels, a resilient support on the frame for the fore part of the vehicle, a rod forming a pivotal connection between the frame, the support and the vehicle, and serving also as a steering spindle and operative connections between the spindle and the front wheel.

718,244. Supporting Shoe for Vehicles with Air Tires. Leon Combrun, Clichy-on-the-Seine, France. Filed August 25, 1902. Serial No. 120,993. (No model.)

Claim. A supporting shoe for vehicles with pneumatic tires composed of two angle irons and a connecting plate bearing on the ground and having lateral arms, one pair of which is rigidly secured to one of the angle irons, the other pair being pivoted to the opposite angle iron, each arm being provided with a profile to fit the sides or edges of the rim and being provided with means to clamp the arms against the rim substantially as described and for the purpose set forth.

718,275. Wheel for Road Vehicles. Glencairn S. Ogilvie, Woodbridge, England. Filed March 19, 1902. Serial No. 98,879. (No model.)

Claim. In a wheel having a continuous outer ring or tire separate from the felly and movable circumferentially thereon, stops such as projecting from the felly and projections such as from the outer ring in combination with elastic balls or their equivalents interposed between them to constitute an elastic driving medium between the felly and the outer ring, substantially as described.

718,299. Valve for Gas Engines. Edwin E. Arnold, Pittsburg, Pa., assignor to the Westinghouse Machine Company, a corporation of Pennsylvania. Filed May 22, 1902. Serial No. 108,541. (No model.)

Claim 1. The combination with a hollow valve having a horizontally projecting stem, of an internal, tubular bearing for said stem, and means for supporting said bearing independently of the stem.

718,324. Means for Locking the Steering Mechanism of Motor Vehicles. Edward Devlin, Paterson, N. J. Filed September 18, 1902. Serial No. 123,864. (No model.)

Claim 1. In a steering gear for motor vehicles, the combination of a locking member, a steering spindle slidable through the locking member and connected therewith for both parts to turn together at all times, a movable locking member arranged for engagement with said turnable locking member, and means for controlling said movable locking member.

718,334. Igniter Apparatus for Gas Engines. William P. Flint, Pittsburg, Pa., assignor to the Westinghouse Machine Company, a corporation of Pennsylvania. Filed June 26, 1902. Serial No. 113,374. (No model.)

Claim 1. In igniting apparatus for gas engines, the combination with a dynamo, a secondary battery and an igniting device, of a switchboard having a spark coil and switches so constructed and arranged as to connect either or both of the sources of energy with the coil and igniting device.



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718,482. Cooling Means for Explosive Engines. Fred A. Law, Hartford, Conn., assignor, by mesne assignments, to Morton Trust Company, trustee, a corporation of New-York. Filed June 26, 1899. Serial No. 721,882. (No model.)

Claim 1. The combination with an explosion engine, of a steam supply and a conductor between the steam supply and the exhaust chamber of the engine, the outlet of said conductor being arranged in proximity to the exhaust valve, whereby steam is constantly supplied to the exhaust chamber so as to impinge against said valve and the adjacent valve parts when the exhaust valve is closed, substantially as described.

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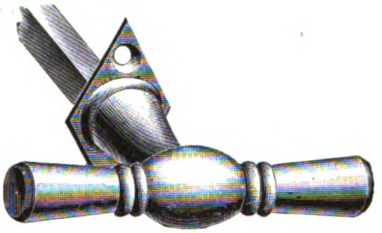
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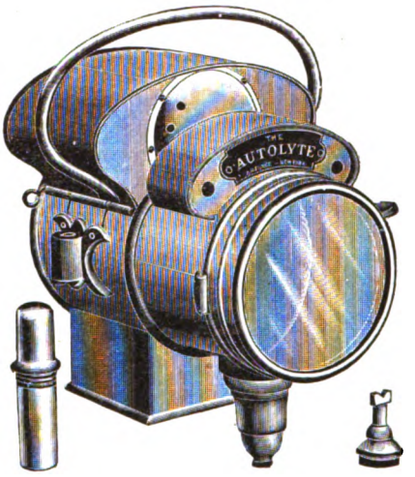
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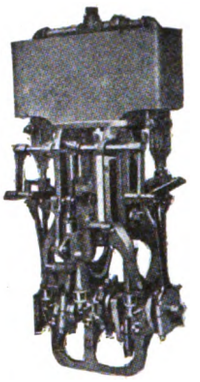
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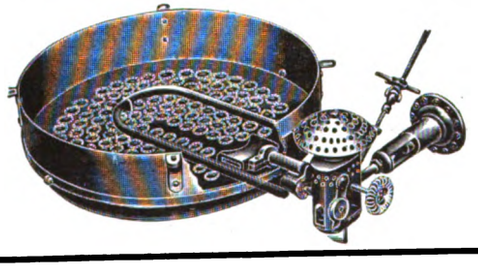
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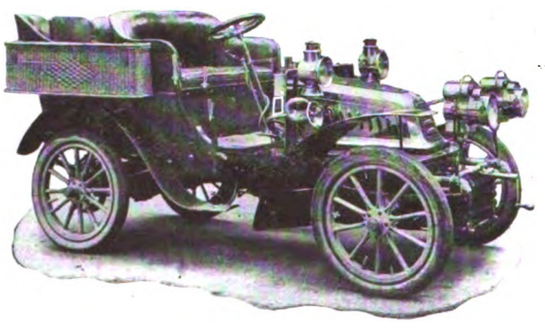
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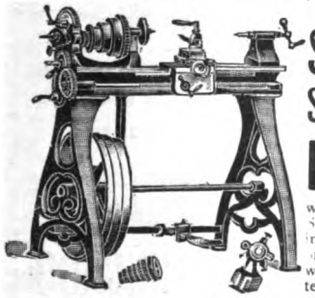


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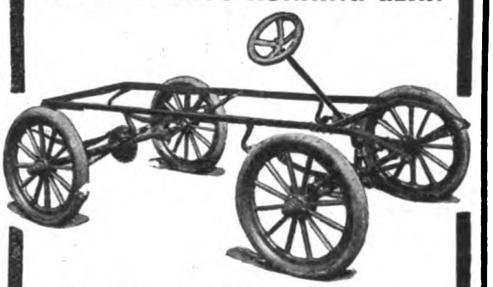
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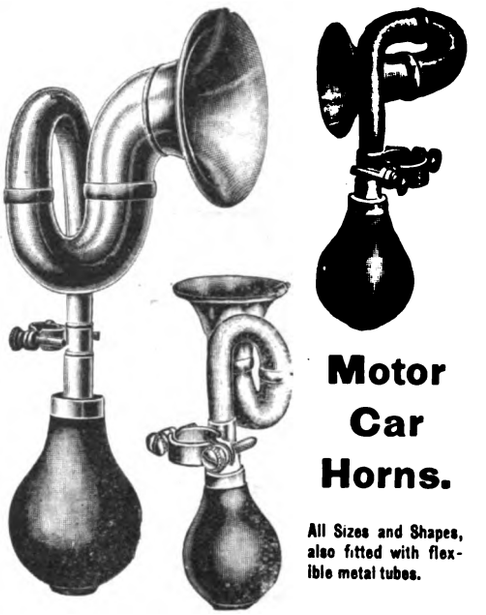


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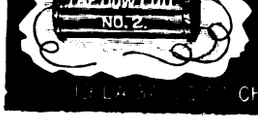
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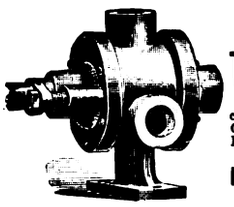
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We are specialists in this line, our organization being thoroughly experienced, and the Station completely equipped with every modern device for proper maintenance.

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Steam supplied gradually—Shuts off at either end of lever forward or backward—No wrong way—Can be removed and reground without disconnecting any pipe.

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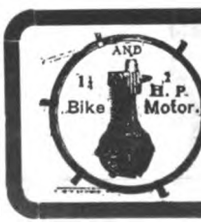
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$7.50 UP.
Full Line Bike Parts.
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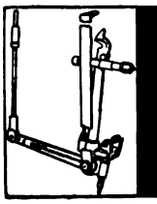
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FOR 1903

Is a Steam Car of Chassis Construction with the Distance of a Gasolene and the Ease of Operation of an Electric.

To the principle of producing great power and wasting practically none of it is due much of the success of the **"White,"** which of all automobiles has to its credit **four first awards** in the **New York-Rochester** endurance test of 1901; **four first awards** in the **New York-Boston-New York** reliability run of 1902, and its **perfect scores** for reliability in the **great English 650-mile reliability trials** of 1902. But one other car achieved this distinction in the English Trials. These marvelous triumphs may be taken as an accurate criterion of the **"White's"** supremacy.



PRICE, $2,000.00

SPECIFICATIONS.

SEATING CAPACITY,	Four	EXTREME WIDTH,	5 feet
RATED HORSE POWER,	Ten	EXTREME HEIGHT,	5 ft., 2 in.
ENGINE,	Compound	CAPACITY OF GASOLENE TANK,	10 gals.
WHEEL BASE,	6 ft., 8 in.	CAPACITY OF WATER TANK,	15 gals.
TREAD,	4 ft., 8 in.		
WHEELS,	30 inches		
TIRES, (Goodrich Clincher)	4 inches		
WEIGHT, (Tanks Filled)	1600 lbs.		
EXTREME LENGTH,	10 feet		

Condenser, Two Independent Set of Brakes, Automatic Cylinder and Engine Lubricator.

EQUIPMENT:—Condenser, Side Lamps, Set of Tools, Horn, Tool Case.

SUCCESS in every-day use, in reliability contests, in races, and in record-trials, has proved the **"White"** system of motive power to be the most noteworthy achievement of automobile developments. The 1903 **"White"** is equipped with every improvement which our experience has shown would be of advantage to the car. Greater power and economy, and greater ease of operation, combined with the noiselessness, has always characterized it.

These advantages are secured by means of a **compound engine**, the **"White" special condenser, a chainless drive, automatic cylinder and engine, lubrication, two independent sets of brakes**, and a variety of minor improvements, which assure the **"White"** purchaser that his vehicle possesses a system of producing and conserving energy unexcelled in the automobile realm.

Safety is the **"White"** keynote. The **"White,"** as is now well understood, has no boiler, and a boiler explosion is, therefor, impossible. The power of the **"White"** car is produced in a generator, in which the possibility of accident is non-existent.

The working parts being entirely encased, the **"White"** is impervious to mud and dust; while its operating parts are so arranged that a lady need have no fear of soiling even a glove in running the car.

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Appreciating the fact that requirements vary as to Single Tube and Detachable Tire Construction, we offer the most reliable of both types—*The Honest Standards.*

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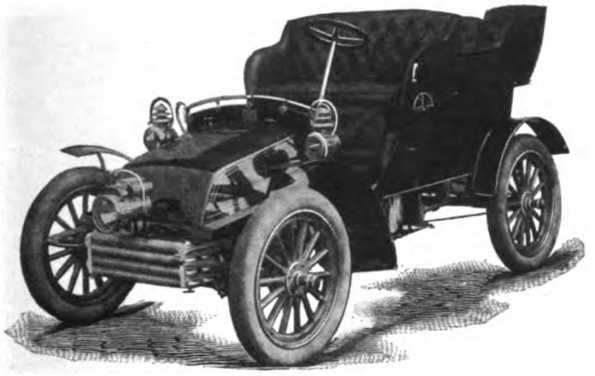
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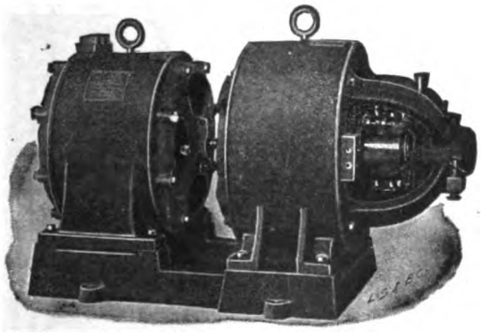
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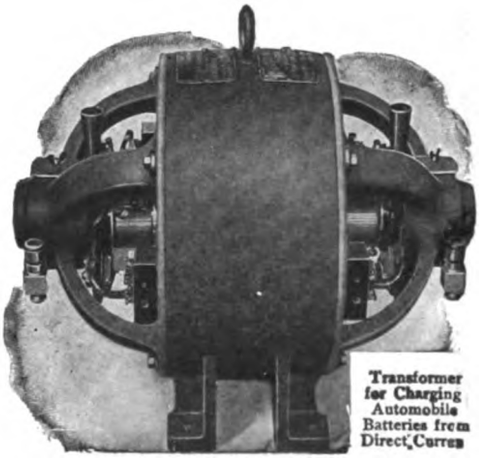
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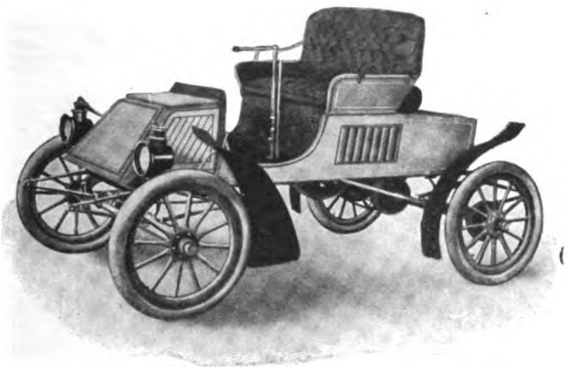
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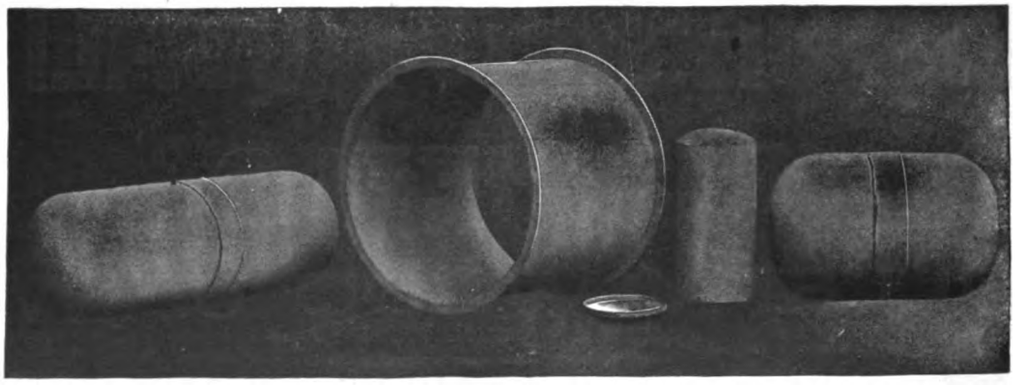
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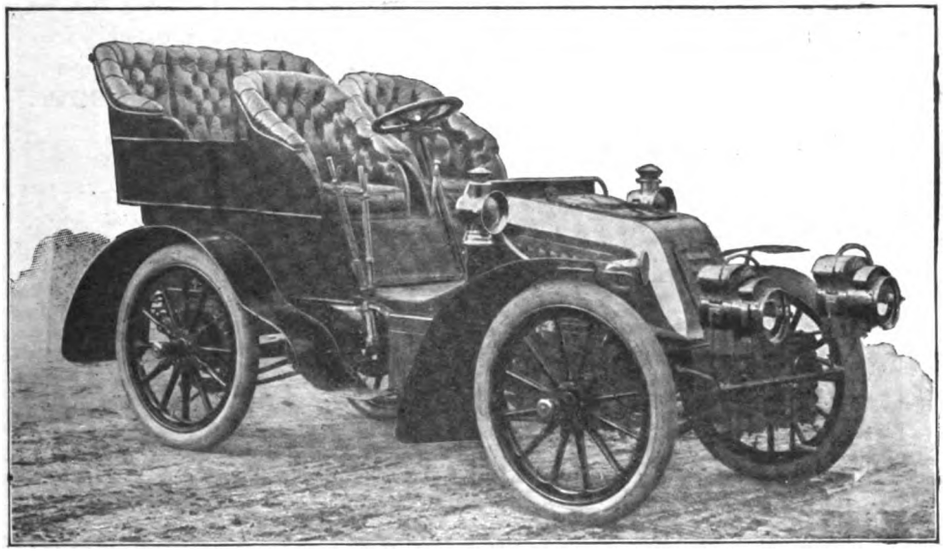
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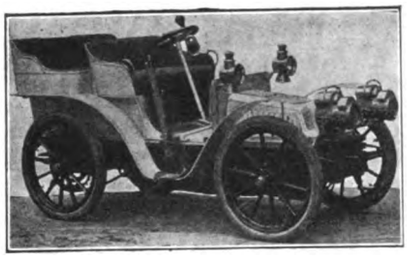
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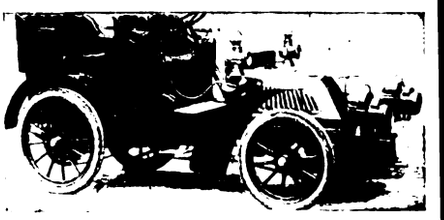
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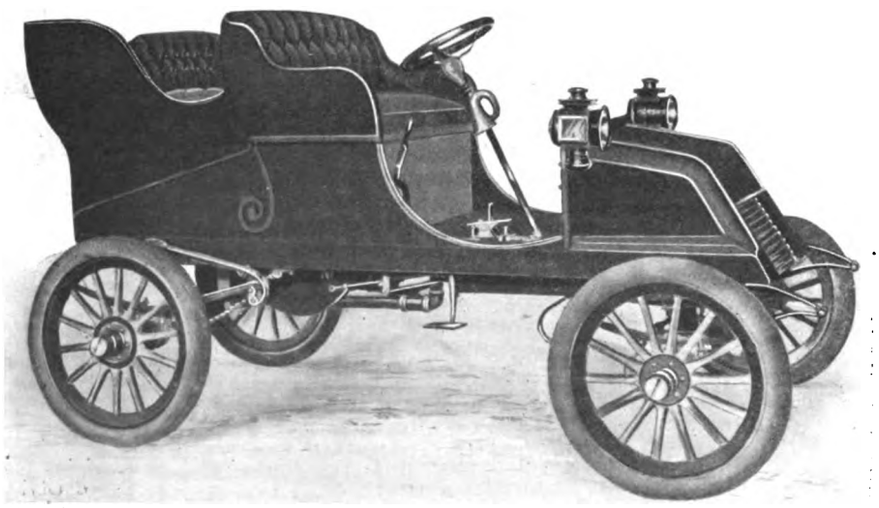


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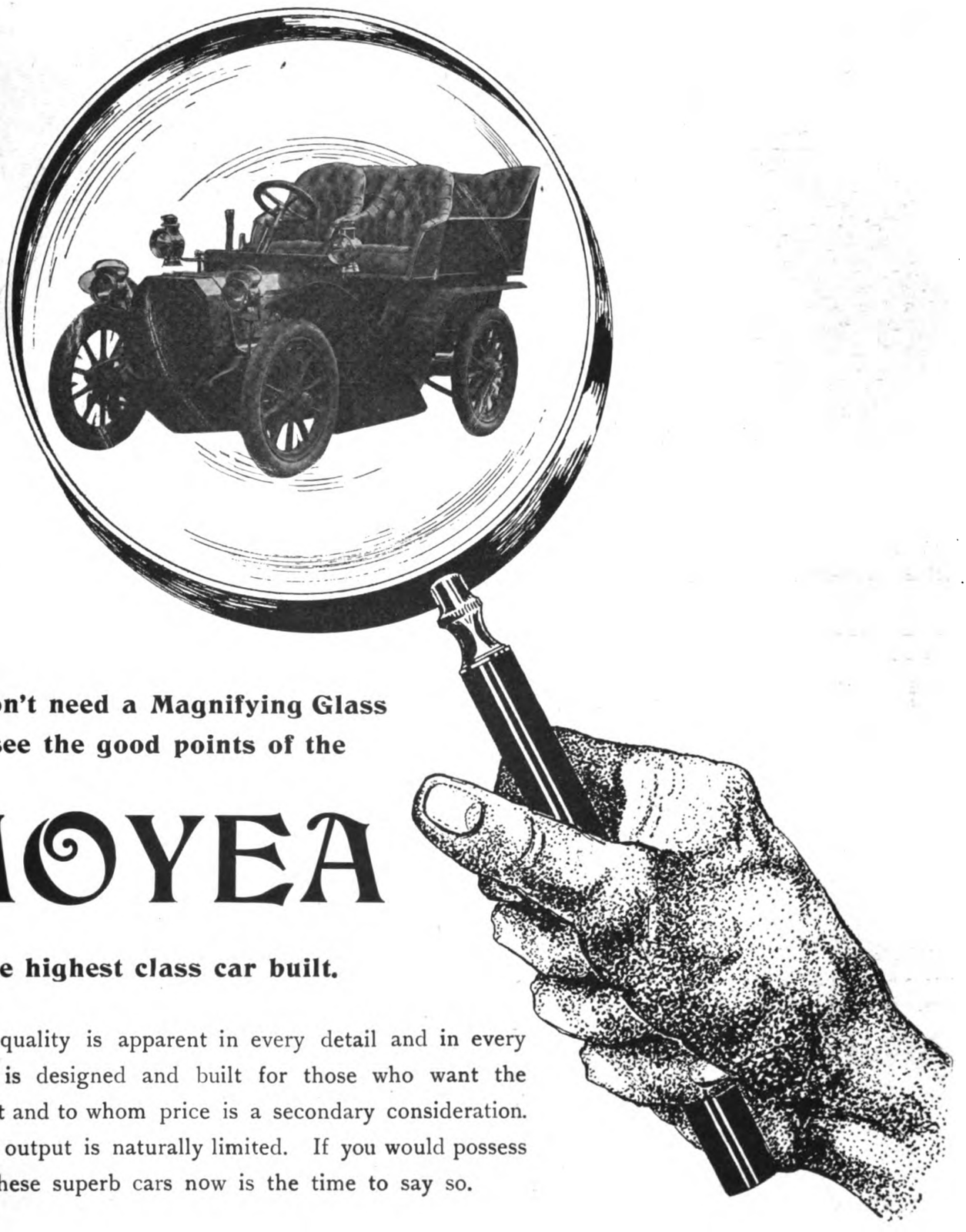
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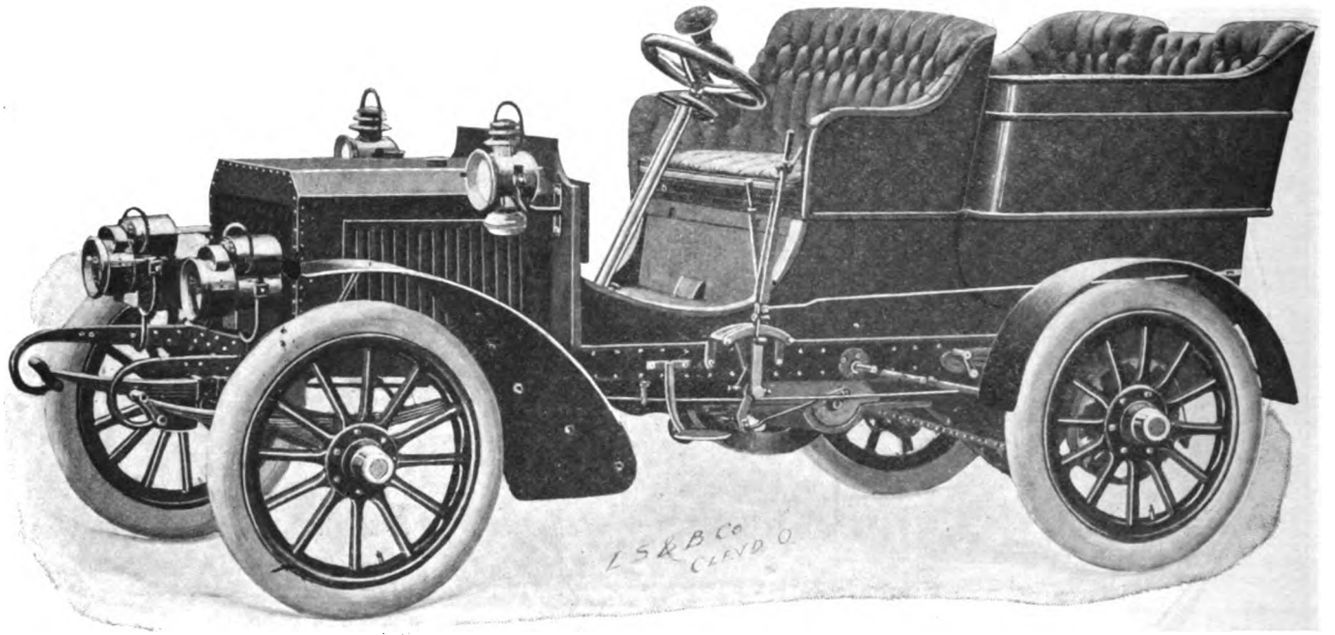
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Are superb in every respect. They fully meet every requirement of a roomy, powerful road car, carefully made and finely finished.

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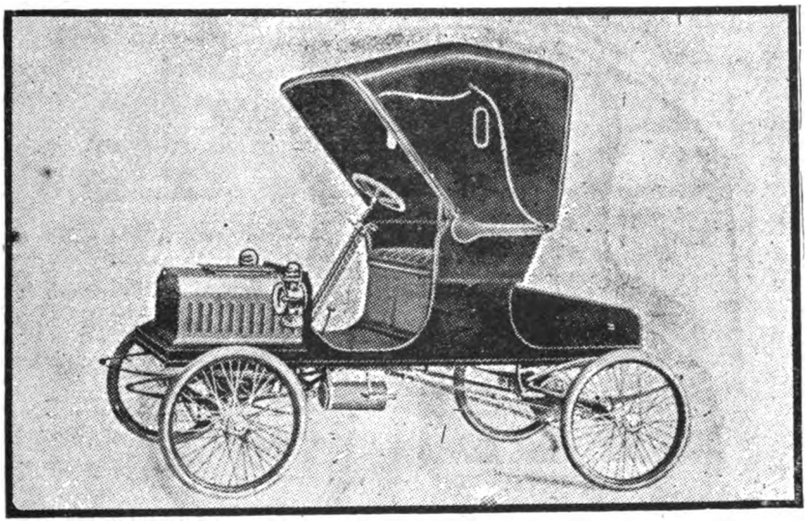
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The Touring Car has a 12 horse power, 2 Cylinder, Vertical Engine, a Slide Gear Transmission giving three speeds forward and one reverse, is fitted with artillery wood wheels and 3 1-2 x 30 detachable tires.

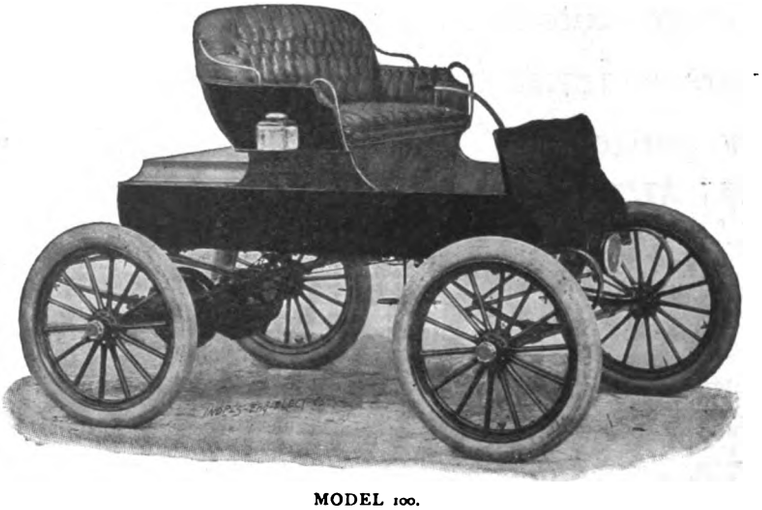
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Volume V. New York, U. S. A., Thursday, January 29, 1903. No. 18

N. A. A. M. IN SESSION

Reports of Year's Work Presented and Five Directors Chosen—Rebates to Members in View—Plan of next Reliability Contest Discussed.

Except for a discussion of reliability contests, which was precipitated by H. Ward Leonard, the annual meeting of the National Association of Automobile Manufacturers, held last Saturday morning in the assembly room of Madison Square Garden, New York, was very tame. The room was bitterly cold; it was the night after the dinner of the N. A. A. M., and the attendance was not very large. The concerns represented were:

Active members—Ajax Motor Vehicle Co., New York; Apperson Bros. Automobile Co., Kokomo, Ind.; the Automotor Co., Springfield, Mass.; the Baker Motor Vehicle Co., Cleveland, Ohio; Crest Mfg. Co., Cambridge, Mass.; Duryea Power Co., Reading, Pa.; Electric Vehicle Co., Hartford, Conn.; the General Automobile & Mfg. Co., Cleveland, Ohio; Thomas B. Jeffery & Co., Kenosha, Wis.; the Mobile Co. of America, New York City; Olds Motor Works, Detroit, Mich.; Peerless Motor Car Co., Cleveland; the George N. Pierce Co., Buffalo, N. Y.; Searchmont Automobile Co., Philadelphia, Pa.; Stearns Steam Carriage Co., Syracuse, N. Y.; Studebaker Bros. Mfg. Co., South Bend, Ind.; Ward-Leonard Electric Co., Bronxville, N. Y.; White Sewing Machine Co., Cleveland, Ohio; the Winton Motor Carriage Co., Cleveland, Ohio; Woods Motor Vehicle Co., Chicago, Ill.

President S. T. Davis read a long and complete report of the year's doings, which in part was as follows:

Organization and Growth.—This association was formed at the close of the automobile show in Madison Square Garden in November, 1900. It started with thirty-eight members, and at the end of the year 1901 had a membership of eighty-seven; the membership at the close of last year was 129, embracing practically all of the active manufacturers in the automobile business, both of completed vehicles and accessories.

Finances.—The organization started and operated for two years on its small receipts for initiation fees and dues. Last year it shared in the profits of the automobile show in Chicago, receiving therefrom as its share $4,347.26, after all its expenses in connection with the show had been paid, including the expenses of the secretary in Chicago for two months.

Automobile Shows—One of the principal expenses saved to the manufacturers has been saved through the effort of the association to have only two automobile shows in the United States during any one year. To that end the association made arrangements with the Automobile Club of America and the Madison Square Garden Co. to hold shows in New York City jointly, the association sharing in the profits to the extent of 30 per cent, after paying all expenses, being equally with the club, the Madison Square Garden Co. taking 40 per cent of the profits, after paying all running expenses. The association has also made arrangements with S. A. Miles, of Chicago, and the Automobile Club of Chicago to hold a show in the West, in the city of Chicago, from which it receives one-half of the profits. The association expects to receive from these two shows during the year about $15,000 in the aggregate. I expect that at the end of the current year the association will have sufficient funds, after paying its running expenses, to enable it to rebate to its members a portion of the expenses which they incurred during the automobile shows at New York and Chicago, probably in proportion to the space occupied and paid for. In promoting these two shows the association has enabled the members to show their product in the two large trade centres of the United States, and has made it unnecessary for them to exhibit anywhere else, thus saving the annoyance and expense of small shows in other cities.

Standardization of Parts.—The association has endeavored to standardize those parts that all manufacturers use, such as lamp brackets, single tube tire lugs and rims, clincher rims and chains. The first one taken up was the standardization of the

(Continued on Next Page)

MAKERS MEET COMMITTEE

And Approve Projected Contest for Commercial Vehicles—Will Probably Occur in May—The Motor World's Suggestion Finds Favor.

It was interesting to note at the meeting of the contest committee of the Automobile Club on last Thursday, at which the makers of commercial vehicles were invited to be present and make suggestions regarding plans for a test of commercial vehicles, that interest was manifested on the part of several concerns who were not known to be making or preparing to make wagons or trucks. Those represented at the meeting were the Vehicle Equipment Co., American Steam Carriage Co., Daimler Mfg. Co., Trumble Mfg. Co., Fischer Motor Vehicle Co., H. Bartol Brazier, Union Motor Truck Co. and Locomobile Co. of America.

Letters in which the idea of a commercial vehicle contest was commended were received from the Morgan Truck Co., Electric Vehicle Co., Fournier-Searchmont Co., Adams Express Co., Upton Machine Co., Trumble Mfg. Co., Thornycroft Steam Wagon Co., Stearns Steam Carriage Co., Grout Bros., St. Louis Motor Carriage Co. and Chicago Motor Vehicle Co.

The contest committee, consisting of John A. Hill, chairman; Emerson Brooks and Roland R. Conklin, explained that it was deemed desirable to hold a contest some time in May which will demonstrate to the public at large the practicability of the motor truck and delivery wagon and their superior value for business purposes. As outlined at the meeting, the contest will be one of two or three days' duration, open to business cars of all types, and in accordance with the suggestion made in the Motor World of January 15 a goodly portion of the course will be through the crowded streets of the business part of the city. It was decided not to complete the plan for the contest until after more suggestions had been received from manufacturers who were not present.

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N. A. A. M. IN SESSION.

(Continued from from Proceeding Page.)

single tube tire lugs and rims. After consulting with the tire manufacturers and the members of this association this was accomplished. We expect that at an early date the clincher rims will be standardized as well as the rims for solid tires. We have communicated with the lamp manufacturers, and hope at an early date to be able to give to the members a standard lamp bracket, to which all lamp manufacturers will make their lamps conform.

Standard Warranty.—The public demand for a guarantee with each machine for a definite length of time has been so persistently asked for by purchasers of automobiles that the association got up a standard warranty, which is now used by its members.

Legislation.—The association has endeavored in a quiet way to prevent adverse legislation wherever possible. To this end we have co-operated with the different automobile clubs in the different cities of the country, and our joint efforts have in most cases been reasonably successful. Some of the States and cities have even gone so far as to threaten to legislate for certain requirements on automobiles, such as two sets of independent brakes and certain requirements regarding muffler, etc.

Transportation.—The association has been working for some time endeavoring to reduce the freight rates, which at present seem to be unnecessarily high, and the railroad companies seem to discriminate particularly against carrying automobiles. Our inquiries to the manufacturers have proven that the claims for damages against the railroads have been practically nothing at all. Notwithstanding this fact, the only thing we have been able to do was to prevent a contemplated rise in the freight rate on automobiles and more stringent regulations. This is only a step, but in the right direction, and we hope by concert effort to accomplish more in the coming year. In this same line we have taken up the insurance during transit, and have had the ocean insurance rates reduced to about one-half, and we are now working on the railroad insurance rates.

Foreign Trade.—Through the efforts of the association in Washington the United States Government has instructed all consuls in foreign cities to furnish a complete statement of the condition of the automobile industry in the city in which each is stationed, and to keep the department informed regarding the matter regularly, as he does in other lines of industry.

General.—There are a number of important topics that it has been impossible for the association to take up and to consider fully during the last year, owing to their number and the lack of time. One of the most important is practical automobile tests, such as endurance runs, hill climbing contests, stopping contests, races, etc. I think these matters should have the earnest consideration of the members of the association and their recommendations made to the various organizations that give these contests. The secretary of the association has been gathering information for the last few months, with the idea of putting before the members a plan for a directory of storage, repair, charging and supply stations throughout the United States, the information to be supplied by the members and their agents. A committee of the association is now working on a method of giving to employes of manufacturers a certificate of competency when they leave the firm, the object being to state on the certificate that the individual named has been employed for the company for —— number of days, months or years, and that they are competent to operate or to repair, or to operate and repair machines of their manufacturers. This certificate would be forwarded to the secretary and the seal of the association put on it, and would expire at the end of a year. Of course, there are further details in regard to this matter, but something will eventually be worked out which, I think, will be of value to manufacturers, dealers and the purchasers of automobiles.

The report of Treasurer Percy Owen, read by Secretary Harry Unwin, showed that the year 1902 had been entered upon with a deficit of $370.48, which was quickly made up by the receipts from dues, and at the close of 1902 there was a balance of $1,419.23 on hand, with accounts payable amounting to $717.94.

On a motion made by Percy Owen the election of five new members of the executive committee for a three year term was taken up, and by a unanimous vote the secretary was directed to cast one vote for the five previously nominated, as follows: H. Ward Leonard, Ward Leonard Electric Co., New York City; Windsor T. White, White Sewing Machine Co., Cleveland, Ohio; Lucius T. Gibbs, Vehicle Equipment Co., New York City; F. S. Fish, Studebaker Bros. Mfg. Co., and I. A. Page, J. Stevens Arms & Tool Co., Chicopee Falls, Mass. Mr. Page succeeds W. C. Baker. All the others were re-elections.

H. Ward Leonard launched the talk about reliability runs by saying that plans for such contests should be considered by the manufacturers and suggestions made to the clubs that promote them, because the manufacturer is more practically interested than any one else, and has more at stake. A reliability run with a limit of fourteen miles an hour, he declared with emphasis, was a farce. He also scored the observer system, saying that it was not just to have the manufacturers competing adjudged by a lot of unknown men of uncertain competency. His idea was that one of two sorts of contests should be adopted—have the cars compete in a contest that will embody every sort of test, including speed, hill climbing and gasolene consumption, or else have them join in an affair such as is held in France, where the first car to finish is the winner. Windsor T. White said he favored a run of 1,000 miles in length.

After a little more discussion Mr. Leonard made a motion that the association should favor a contest on similar lines to the Circuit de l'Herault, held annually in France. In this contest the course is about 100 miles, and a total of thirty marks is awarded, as follows: Gasolene consumption, 10; reliability, 8; hill climbing (including brake test), 5; comfort and appearance, 5; speed, 2.

John Brisben Walker called attention to the half mile of road that extends north from the Harlem Speedway. This, he said, would make a fine place for a contest, which should begin at the Kingsbridge Road and lead to the top of the hill and down again. It should be a speed contest to the top of the hill, and coming down there should be a couple of stops made. A motion that such a contest should be recommended to the Automobile Club was carried.

With regard to the proper time for holding shows there was some difference of opinion as to whether it should be later or earlier, but the preponderance of opinion was in favor of continuing to hold them at the present time. Mr. Penning, of the General Automobile & Mfg. Co., said that in view of the crowded conditions of this year's show in Madison Square Garden he thought that in the future it mighe be found advisable to exclude the supply and parts dealers from the complete vehicle shows and let them have a separate show of their own, either before or after the exhibit of motor cars. This is in line with the suggestion thrown out by the Motor World of January 15. The matter was finally referred to the executive committee, with the recommendation that the views of all the members be obtained.

It was suggested by Mr. Penning that another measure of relief which it might be well to adopt would be that of allowing every applicant just one space until everyone was cared for, and then divide what space there might be remaining among those who wanted more on some equitable plan which might be devised.

President Davis said the present show would yield a gross profit of nearly $40,000, of which the N. A. A. M. gets 30 per cent, the Automobile Club 30 per cent and the Madison Square Garden Co. 40 per cent. At Chicago the N. A. A. M. gets one-half the profits. Out of the gross profit $10,000 has first to be paid for the rent of the Garden, and the percentage allotments are paid out of what remains, the Garden company getting the $10,000 first and then 40 per cent of what remains.

In the course of his preliminary remarks Mr. Davis suggested that a plan should be devised under which a portion of the profits from the shows can be rebated to the exhibitors in proportion to the prices paid by them for rent of spaces. Another suggestion by the president was that the association should do something about arranging for a display at the St. Louis Exposition.

The executive committee will meet on February 4 to elect a president and other officers from among their own number.

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N. A. A. M. BANQUETS

Good Fellowship and Fair Speeches the Rule—Scarritt's Vivid Word-Picture of the Future.

There was a roundup of the "good fellows" of the trade at the annual dinner of the National Association of Automobile Manufacturers at the Waldorf-Astoria in New York on last Friday night, and yet withal the dinner suggested the inadvisability of introducing social festivities during the show week. Every one was tired, the dinner did not begin until an hour and a half after the time set, and it was in the small hours that it was concluded. The following morning every one who had attended it was more tired than ever—some of them had headaches and felt illy fitted for the work of the last day, to say nothing of the Automobile Club's dinner on Saturday night.

About two hundred and fifty went to the dinner, which was notable for the fact that it was very wet in some parts of the room and very dry in others, for it was left to every one to buy his own wine. The representatives of the big New York papers were directed to go into the room and select a table for themselves, and that was the last attention paid to them. Before the dinner was concluded most of the reporters left without waiting for the speeches, and there was scant notice of the affair the following morning.

President S. T. Davis, jr., presided, and Winthrop E. Scarritt was toastmaster. There was much informality throughout, and some of the interruptions of the speakers created great amusement. President Davis, while making his preliminary remarks, was called upon to "open your muffler." Mr. Scarritt read a very interesting speech with oratorical effects. It made a great hit when he brought out with elaborate emphasis the phrase "we manufacturers." In part Mr. Scarritt said:

"Gentlemen: My first sentence must be one of hearty congratulation on the splended progress you have made in your chosen industry during the year which now marks its close. The great epochs in industrial history have always been preceded by long periods of preparation. Not until the dawn of the twentieth century was man prepared for the automobile. In the realm of motion the modern motor car stands on the dividing line between the amoeba and the archangel. It is a far greater cry from the ox of the ancients to the automobile of to-day than it is from the modern motor car to the glistening airship of the future. A combination of the best material known to modern science and the highest mechanical skill of the age are necessary to create a vehicle upon the integrity of which human life depends every moment it is in use. This emphasizes the fact that we, as manufacturers, should provide our cars with every possible safeguard. They should be equipped with double brake, with efficient mufflers and with every known device tending to make them strong and safe.

"This is one of the most religious bodies in the world, not in words, perhaps, but in that higher test of worship, deeds. It was the great Benjamin Franklin who said, 'Worship most acceptable to God is service to mankind.' Measured by this high test, you are doing a great religious work because you are advancing an industry which some great day is to take the burden off the shoulders of humanity. Permit me a concrete illustration:

"Take the present congested condition of our streets in this great city. Think what it would mean if self-propelled cars could be substituted for horse drawn vehicles. First, it would mean clean and sanitary streets. This reason alone would be sufficient to justify the exchange. Second, consider the additional space that could be saved if all the horses on our streets were instantly removed. That would mean practically doubling the width of the streets. Third, it takes a horse drawn truck one hour to drive from the Battery up Broadway to Forty-second-st. A motor car would do this in exactly one-half the time and carry double the load. That would be equivalent to taking out of the streets one-half of all the vehicles all the time. What a godsend this would be to our congested city.

"Gentlemen, I do not believe that the wildest dreamer of us all has for a single moment got the faintest glimpse of the great place the automobile is to fill in our modern life. The coming of the motor car is to mark an epoch in civilization as did the discovery of steam, the sewing machine, the electric telegraph and the telephone. You, gentlemen, are laying the foundation of a structure whose massive walls and towering minarets will some day be seen and known and appreciated by all men.

The band played "He's a Jolly Good Fellow" when this speech was ended. Borough President Cantor was introduced as "one of the original good roads men," and three cheers were given for him. When a tiger was called for a voice said, "The Tiger doesn't go with him."

Mr. Cantor called attention to the fact that Captain Miles O'Reilly was abroad in the Tenderloin—this, he said, was by way of caution to some of the guests. He said that he owned an automobile, and had thought on two occasions that it was an airship. In speaking of good roads, he said that the bicycle rider was the first man who had considered the subject of good roads with any seriousness, and that the automobilists should do much more than the cyclists had been able to do.

F. L. Smith, who was down to speak on "How to Sell an Automobile," said that he wanted to proclaim that the main thing to be remembered by the automobile trade at this time was the "great doctrine, 'don't knock.'" He said that the doctrine of not knocking was not understood by all present, but that the advice was of the same order as that of don't monkey with the business end of the mule, for the solar plexus is always open for business.

T. C. Martin was introduced by Mr. Scarritt as "the bald poet," and in retorting good naturedly he said that "before Mr. Scarritt is much older in the manufacture of automobiles he will be a damned sight balder than I am." He continued: "I have lived through many vicissitudes of electricity, and I still believe in the future of the electric automobile, and that the time is near when 75 per cent of all traffic business will be done by electric automobiles."

John S. Wise, of Virginia, spoke in a humorous strain, saying that he had had a delightful dream of a lot of persons who had been crippled and maimed by automobiles coming to him in a stream to institute suits and that he had won the suits. That he dreamed as a lawyer, but he was an automobilist, and as such knew that the dream was silly.

At the conclusion of the set speeches Mr. Scarritt proposed a toast to the American team that is to compete for the Bennett Cup with the hope that one of the team would win it. This toast was hailed with loud acclaim, and after the meeting had formally broken up Messrs. Winton, Mooers and George Banker spoke when called upon. Mr. Winton said he hoped an American would win the cup; Mr. Mooers said he was sure an American car would win; he thought it would be a Peerless, but if it proved to be a Winton he said he would be the first one to go up and shake hands with Mr. Winton. George Banker counselled that there should be no jealousy between the memberr of the team, but that each should go over with the one idea of having an American car win, and be willing to help his companions, if necessary, to gain a victory.

White Probably next President.

When the directors of the National Association of Automobile Manufacturers meet on Wednesday next, Feb. 4th, to elect officers, it seems likely that the selections will be made harmoniously and unanimously.

The only man mentioned for the office of president is Windsor T. White, of the White Sewing Machine Co., of Cleveland, Ohio, and the consensus of opinion of the directors makes it appear that he will be elected without opposition.

Mr. White has charge of the commercial end of the White Sewing Machine Co., which is one of the most substantial manufacturing concerns in the country. He is president of the Cleveland Automobile Club, and has a large circle of acquaintances throughout the country and is a high grade man, both socially and commercially.

For the three vice-presidents are mentioned M. J. Budlong, of the Electric Vehicle Co., Hartford, Conn.; Charles Clifton, George N. Pierce Co., Buffalo, and Ward Leonard, New York, all representative men.

Percy Owen, of the Winton company, will undoubtedly be elected treasurer, a position which he has filled in a satisfactory manner during the last year.

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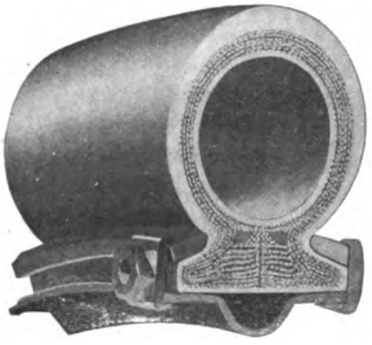
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The Verdict.

It was a great show—so great that it is difficult if not impossible to conceive how there can ever be a greater one, it matters not from what standpoint it may be viewed.

How the Show was Handled.

They say that great occasions make great men; inferentially, great occasions also make great newspapers or trade papers.

The automobile show was in the nature of a great occasion—the greatest probably that has yet occurred in the world of automobilism. It is interesting, therefore, to remark how the automobile journals handled the subject and proved themselves equal or unequal to the occasion.

Horseless Age—Briefly summarized the features of less than one-quarter of the exhibits; probably will finish its report before July 4 next.

The Automobile—Dealt not with summaries of features, but with the glittering generalities of only a part of the exhibits.

Motor Age—After inveighing against "puffs" and "write ups," devoted itself to nothing else save amplification of statistics.

Automobile Topics—A hodgepodge of nothingness.

MOTOR WORLD.—A complete and detailed report, not of summaries or of generalities or "write ups," but of every tendency, every car and feature of it, every new sundry and accessory and their features—all those were sought for, and when found—they were found in plenty—were brought out and described, each in its separate department, while the superiority of its illustrations and the newness and importance of the cars and other subjects of illustration are apparent to all who have eyes to see with. And this full report did not interfere with the gathering and publication of the current news of the week—most of it exclusive news.

"The Motor World had the only report worthy the name," was the way an old newspaper man expressed it, and added, "If you are not proud of it you ought to be. It developed the real greatness of the American trade; the trade should be able to see and appreciate the service."

The Motor World is proud. We trust the trade is appreciative.

Touring Cars and Tonneaus.

Twin features of the show, the touring car and the tonneau body, were seen everywhere. In gasolene cars the number of makers who did not produce something of the kind were so few as to be almost negligible. Even with steam vehicles there was a fair sprinkling of the combination, and they were not unknown among the makers of electrics.

To fully understand this wonderful vogue of the tonneau body—for it and the touring type of car are to all intents and purposes synonymous—it is necessary to review the history of this body and to touch upon its real and acknowledged merits.

Like so many other good things pertaining to automobiles, the tonneau body came from France. Two years ago it was all the rage in Paris and the provinces, possibly to an even greater extent than it is here now. A year later, that is, at the Paris exhibition of 1901, its extinction was threatened by the introduction of the double phaeton. But whatever fears may have been entertained on the score of the latter they appear to be dissipated; for the double phaeton made but little progress, and was barely mentioned at the show held in Paris last month. Thus even in the changeable city on the Seine the new has not succeeded in supplanting the old. The reasons are not far to seek.

The tonneau body scores heavily on looks. With it the seating capacity is greatly increased; there are many more square feet of cushion surface than in the double phaeton or any other type of body. As with seating area, so with baggage stowing capacity. There is, or seems to be, an infinity of room for the bestowal of odds and ends of all kinds. The body swells out, sideways and backward, until a prodigious amount of space is made available.

From the construction of the motor in front type of car, the rear seats are necessarily positioned between and over the rear wheels. Hence access to these seats must be had from the back, as with a tonneau body, instead of from the side, as would be the natural way with the double phaeton type, with the front and rear seats parallel. If the latter style is adopted some method must be provided whereby the occupants can enter from the side, a matter of most difficult accomplishment. With a tonneau body the door in the back arrangement is most natural. There is no wheel to climb over or come in contact with. Instead an easy and natural method of ingress by means of a door in the back, with a broad and low step leading to it. To these solid advantages there is to be added some that are such more in appearance than in fact.

The tonneau body is pleasing in appearance and a welcome change from the usual straight parallel seats of the horse drawn carriage. It looks like a touring car, as no other type of automobile or other vehicle does. The glimpse of the interior, caught through the open door, impresses itself upon one, with its luxurious seats, high back and changeable position, it being possible to face either forward or sideways.

It is these things that make for the success of the tonneau and enable it to continue its vogue. Because of them the tonneau now dominates the American automobile as it has done the French, German and British ones for years. It does not seem even yet to have reached the height of its popularity; rather it is increasing it, until there bids fair to be nothing else in cars designed to carry more than two passengers.

Of the tonneau bodies themselves it can be said without hesitation that they show a vast improvement. Even yet there are bodies that are toylike, with tiny doors,

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through which no autoist of more than average avoirdupois can squeeze without trouble; and even if the door obstacle be surmounted, it is found that in the seats one is cramped and confined to an almost intolerable degree.

But the majority are free from these shortcomings. Roomy and comfortable, well springed and upholstered, frequently with an extra seat, rendered available by the closing of the door, thus making a phaeton rear body, they are as luxurious as can be desired. If anything can insure the permanency of the tonneau it is such examples as these.

Where Interest Lags.

The interest displayed in and created by the annual meetings of both the American Automobile Association and the American Motor League last week was distinctly deplorable. No one, not even the newspapers, seemed to care what they did or how they did it, and the paucity of numbers and lack of enthusiasm on the part of those who did attend was far from inspiriting.

The League to our mind made a very false step and alienated support by choosing for its head a man who is not, and never was, an automobilist, and who has served the interests of automobilists only when he was paid for it, and who then lost the one case in which he was engaged. His only claim to attention is that he served as president of the League of American Wheelmen during its boom days, and employed brass band and circus methods to increase its membership, and while posing as a patriot drew a fat salary from the treasury, and created others for his henchmen in the Tammanyized ring that he builded within the now impotent organization. Going outside the ranks of automobilists for a president conveys some unpleasant suggestions.

The Necessity of Racing Revision.

At last the hybred racing rules inflicted on the automobile public in a bygone age are to be revised, Americanized and brought up to date. A heritage from a former controlling body, based on the French Jockey Club rules governing horse racing; rambling, vague, inconclusive and provocative of dispute and protests, they have survived until now, despite the fact that they never were useful, far less satisfactory.

Again and again the absurdity of this conglomeration of words dubbed "rules" has been acknowledged and a revision promised. But nothing that could be dignified by this name has ever taken place. As a result whatever progress racing has made has been in spite of rather than with the help of these rules.

Now, however, the sponge is to be passed over the slate, the present rules expunged and new ones adequate for the purpose framed.

With the assistance of the large calibred men who have the matter in charge, the endeavor is certain to be crowned with success.

The Week After.

After the show was over, after the strain was removed, then came the reaction most natural, when the lists of the sick ones waxed fat and no one would work lest he had to, and even they funked at that.

This has been the week of the Big Weariness for all and of the Big Loaf, for such as could take it. Those who could not lay up and recuperate recalled the proverb that "half a loaf is better than no rest," and shirked the best they could.

Everywhere in the trade was heard the same story of unmitigated tiredness, and more than a few actually took to their cots and called the doctor. President Shattuck was reported to be ill at home early in the week. At the club it was just about as lively as in a hospital, and even in the haunts of the newspaper men, who are supposed never to tire, there was a strange lethargy. Automobile news was not wanted. Rest was the sole damnd.

It was ever thus, but cheer up; the show, like Christmas, comes only once a year.

Law-Tinkering Rampant.

With the assembling of legislatures the automobile comes to the front, but in an undesirable manner, i. e., as the subject of restrictive legislation. Already two States—New Jersey and Connecticut—have moved against it, and a third, Pennsylvania, will shortly follow their example. It is well known that this State is to witness a battle over the infamous Cocks law, in which the entire ground will be gone over, and, it is hoped, a reasonable basis of legislation agreed upon. Massachusetts and other States are known to have bills impending or amendments to present laws.

Altogether it is plain that both the foes and the friends of the mechanically propelled vehicle are awake to the importance of a settlement of their differences. The bitterness of the former has somewhat abated—or perhaps it is only slumbering—but there can be no doubt that oppressive measures will be advocated by them. On the other hand time works in favor of the automobile. It is much stronger to-day than it was six months ago, and a quasi-friendly feeling has been developed among people formerly indifferent or hostile, but now mildly interested.

It is as certain as the day that if injurious legislation can be prevented this year it will not be enacted in the ones to follow.

As thirsty as Sahara's sands are many persons who are entering the industry or pastime at the present time for knowledge regarding the automobile. Its construction and practical working are being studied with the keenest interest all over the country by people who have turned students for the nonce and are determined to master the intricacies of this—to the superficial observer—intricate modern locomotion development. It is not difficult to foresee the end, nor will it be long coming, so rapidly are the students learning their tasks.

Lost, Strayed or Stolen—Several unwritten manuscripts by W. K. Vanderbilt, Foxhall Keene and Wilberforce Jenkins; also several undrawn cartoons by Homer Davenport and others, dreamed of for use in an "automobile daily." One large gilded brick, or $1,000 (stage money), will be given for their discovery and conviction. Address, Evan Escent Coughscwartz, care White Steal Champagne Co., New York.

While reflecting on the great growth of the vertical engine it is well to bear in mind the fact that the horizontal ones in use greatly outnumber them. In stationary engine and launch work the horizontal type is almost universal. But in France, where it was once a great favorite for automobile work, it has almost disappeared.

In buying a horse the first place examined is his mouth—the only part of his internals that is accessible. In buying a second hand automobile the "innards" are no less important. There are more of them, and, what is more to the point, they can be got at. They tell the tale of value as nothing else can.

Tubular frames have lost ground visibly. On the heavier cars they are now rarely seen. Reaches, too, are even worse off. A year ago they were a factor; now they are seldom seen.

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"DOOLEY" AT THE DINNER

Makes his Appearance in a Runabout—Song he Sang and the Others who Spoke.

An electric runabout, rolling along under the power of its own motor in the big ballroom of the Waldorf-Astoria, was an innovation at the annual dinner of the Automobile Club of America, held last Saturday night, that took everyone by surprise. Yet this was not all of the treat of unexpected originality enjoyed by the guests at the dinner. From the electric car stepped a "Mr. Dooley" in costume, and sang a paraphrased version of "Mr. Dooley," adapted to fit or burlesque the leading personalities present. It was Will T. Carleton, the actor, who impersonated the famous creation of F. P. Dunne, and the song that he sang was:

Oh! Shattuck is a President who never can be beat,
At least by anything around that travels on four feet.
The auto-crat of Auto-Town, chauffeur of high degree,
To whom the amateur and "fesh" must bend the humble knee.
Says Mr. Dooley, says Mr. Dooley,
I've told friend Shattuck what he ought to do;
Stick tight to Panhard; get down to hard pan,
And rule like Mr. Dooley—ooley—ooley—oo.

Dave Morris, Astor, Vanderbilt, those chauffeurs gay and game.
Dispute with Bostwick, Bishop, Wright, your laurel wreaths of fame.
True sportsman's blood is theirs, my boys, tingling to flying heels;
But running faster as they steer some "Devil's" flashing wheels.
Oh! Mr. Dooley, Oh! Mr. Dooley.
From hayseeds and clam-diggers give 'em rest;
What seentence crueller: "Ten or the cooler?"
With Mr. Dooley—ooley—ooley—oo.

Soon will our autos fly the air, and sail around the moon.
'Twill be because on public roads they can't find elbow-room.
Lacking the pull of politics and graft of corner heeler,
You will not dare go round with Berg in hansom or four Wheeler.
, Like Mr. Dooley, like Mr. Dooley.
This island's owned by drays and trolley tracks;
"I've got a free hand" shouts nervy Vreeland,
To poor old Dooley—ooley—ooley—oo.

Chauffeurs are bold, we're often told, for right ahead they forge;
But they never yet cried "Out of the road!" to grand old Father George.
Still Cantor says G. W. must clear his statue from subway,
Pick up his duds and make a move about the 1st of May,
Unless Mr. Dooley, Mr. Dooley,
Prevents this awful, sacrilegious crime
And winks to Cantor "You surely banter!"
Or scoot with Dooley—ooley—ooley—oo.

Oh! Mr. Dooley, Oh! Mr. Dooley,
The swiftest man the country ever knew;
He's auto-cratic, yet democratic,
Is Mr. Dooley—ooley—ooley—oo.

Carleton was costumed in a County Galway coat and high hat and a yellow waistcoat, sprinkled with green shamrocks. The runabout was whirled about the aisles to the dismay of the waiters until suddenly W. E. Scarritt, dressed as a country constable, appeared and arrested "Mr. Dooley" for running backward faster than the law allows. Mr. Scarritt had on a pair of whiskers from which the hayseed dropped, he wore a long linen duster and carried a billy and a warrant, which he said had been issued by "Journalist-Justice" Wallace, of Hempstead.

This all happened after President A. R. Shattuck, acting as toastmaster, had made his preliminary remarks, and State Senator W. W. Armstrong and Simeon Ford had made their addresses.

It was the most largely attended dinner ever given by the club, about 350 persons sitting down to the repast, which was as fine as it should be at $10 a cover..

At the speakers' table sat Winthrop E. Scarritt, Elliott C. Lee, Willard A. Smith, Simeon Ford, Colonel Albert A. Pope, Colonel John Jacob Astor, the Hon. W. W. Armstrong, the Hon. Theodore F. Kluttz, President Albert R. Shattuck, the Hon. J. P. Allds, W. Pierrepont White, Job E. Hedges, the Hon. Edward A. Bond, Charles E. Adams, J. A. Ockerson and W. T. Carleton.

President Shattuck, before introducing the first speaker, told of the growth in automobiling and the good-roads movement which it had caused. He said that a bill had been introduced in Congress to appropriate $20,000,000 for good roads, the money to be distributed in accordance with the population of the State. Under that rule, he said, New York will receive as its share $2,000,000 on condition that the State appropriates an equal amount. If the bill goes through, he said, the United States will have 5,000 miles of splendid object lesson.

State Senator W. W. Armstrong, of Rochester, the first speaker, owned up that the only automobile he possessed was a little tin one.

He said the day is coming when an automobile will be able to traverse good roads all over the State.

Simeon Ford was the next speaker, and his remarks caused much merriment. For nearly an hour Mr. Ford kept his hearers in a constant roar of laughter. General Roy Stone, Colonel Albert A. Pope, Theodore F. Kluttz, State Senator J. P. Allds, W. Pierrepont White, Job Hedges, Edward A. Bond and J. A. Ockerson also spoke.

Three A's New Racing Board.

The new race committee of the American Automobile Association for 1903 is composed as follows: W. J. Stewart, chairman; Windsor T. White, H. S. Harkness, S. A. Miles and A. R. Pardington.

PATCHING THE SPEED LAW.

Shattuck Makes Suggestions at Albany and Finds Governor Fairly Disposed.

During the week of the show President Shattuck of the Automobile Club took a trip to Albany, and on Wednesday, together with Congressman Townsend B. Scudder, of Hempstead, L. I., had a talk with Governor Odell concerning automobile legislation. Three proposed amendments to the Cocks law were submitted, two of which, it is said, found favor with the Governor.

One changes the speed requirement of eight miles an hour in corporated villages and twenty miles an hour in unincorporated villages to eight miles an hour within one mile of a postffice. Sign posts are to be placed designating the distance to the post-office.

The second makes an automobilist's failure to stop on signal a misdemeanor instead of making him liable to a civil action for damages.

The third amendment, which is still in abeyance, provides for the licensing of all professional chaffeurs. If a chaffeur violates the law he shall be liable for suspension on the first offense, and on the second his license shall be revoked.

For a Speedway in Florida.

A movement is on foot to establish a speeding ground for automobiles on the famous Daytona and Armand beach in Florida. This stretch of sand is about thirty miles long and as hard and smooth as a billiard table, and would be the best place in America, probably in the world, for making straightaway records of a mile or more. The last day of the automobile show saw the inception of the Florida Automobile Association, having for its purpose the development of the big beach as a speeding ground. The organization has the co-operation of certain officials of Southern railroads. The idea is to arrange annual tours to Florida for automobilists and a week-long tournament of racing on the beach in March. A committee of the new association is to go to Florida in a few days to test the beaches and arrange the details for a tournament during the second week in March.

Mournful Meeting of Motor League.

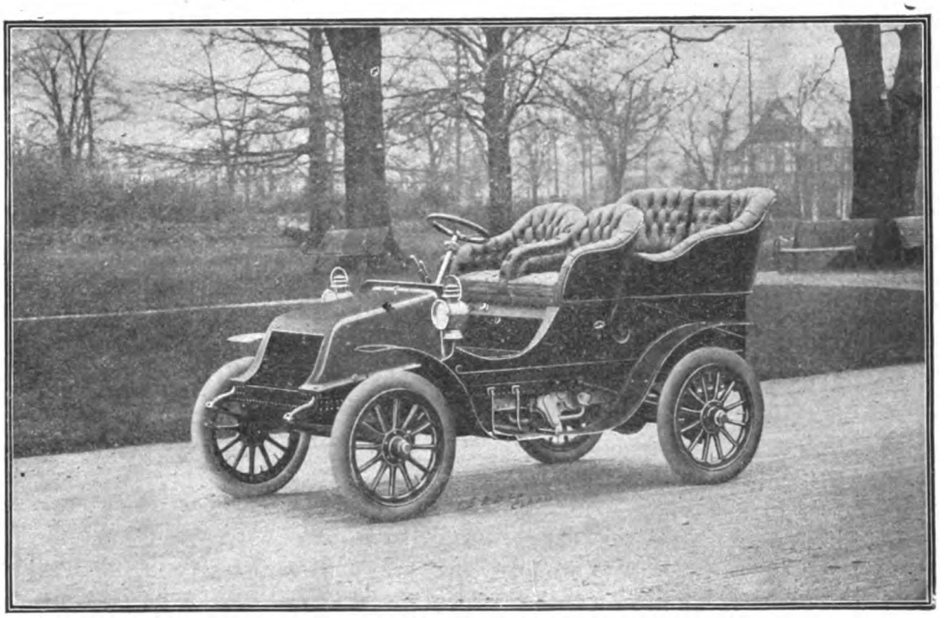
A small attendance marked the annual meeting of the American Motor League, which took place on last Thursday afternoon in the concert hall of Madison Square Garden. After listening to the reports of the retiring officers, the election of new ones was proceeded with, and resulted as follows:

Isaac B. Potter, New York, president; Charles E. Duryea, Reading, Pa., first vice-president; W. G. Murray, Chicago, second vice-president; F. B. Hill, Boston, treasurer, and S. W. Merrihew, New York, secretary.

Resolutions were introduced protesting against the bills now before the Connecticut and New Jersey legislatures hostile to automobilists. An adjournment was taken to the Chicago automobile show.

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$2,500



WILL YOU

pay two thousand, five hundred dollars for a genuinely good automobile which represents the present highest standard of excellence in design and manufacture?

If you do not appreciate the vital difference between superficial perfection and construction that is honestly good and thoroughly scientific from wrist-pins clear out to the last coat of finishing varnish, then you will not be especially attracted by the new twenty horse-power

WINTON TOURING CAR

We hope, however, that you will recognize our latest successful efforts and accord this new model the consideration it deserves. You who have been conscious of the rapid development of the successful American automobile, who have watched it through its various stages since the time—years ago—when Mr. Alexander Winton ran upon the roads his first "horseless carriage," will recognize the great strides we have made toward the goal of perfection in automobile building, and can appreciate in no small sense the genuine pride we feel in this latest triumph.

It is not intended as a "sensation." It does not incorporate a vast number of rare features for which we, in justice, can claim no more than theoretical excellence. Its construction does not embody a vast number of untried experiments, and we do not, therefore, ask anyone to share in a manufacturer's gamble. In presenting this model we give the very essence of practical and thoroughly tried out experience.

Consider the matter of delivery: During the current season we will be able to manufacture just one thousand of these twenty horse-power Winton Touring Cars. A liberal percentage of the total output has already been sold. Supply will not meet the demand, of this we are quite sure. Would it, therefore, not be an act of wisdom to file your order early and allow some one else to be disappointed as the result of procrastination?

THE WINTON MOTOR CARRIAGE CO.

FACTORY AND GENERAL OFFICES

CLEVELAND, U.S.A.

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TENDENCIES, IMPRESSIONS AND QUESTIONS DEVELOPED BY THE SHOW

The impressions or lessons of the show?

The casual observer at the show probably carried away impressions of the general appearance of the machines and their growth "in size," appointment and finish, as there is no doubt but that the tonneau touring car of all sizes, powers and prices is both popular and impressive. These are not limited as heretofore to gasolene cars, but include the steam and electrics, and naturally these are the cars which appeal to the novice.

The more interested observer might ask why the tonneau type is so much in vogue. Has it been adopted for its æsthetic points of excellence, or is it possible that the arrangements of mechanical parts permitted by the tonneau has caused its almost universal adoption?

There is no question but that both influences are at work, and it must be admitted that the tonneau has points of supremacy from a mechanical standpoint. With it the complete chassis is the strong feature. This is admitted even by the steam manufacturers, who are adopting the general lines of construction and make their heavier touring cars conform to the general standards of the gasolene tonneaus.

To the careful observer and student of the show this certainly is not the predominating feature of advantage in automobile construction, although the steam manufacturers in adopting the tonneau have certainly made the greatest departure from practices heretofore adhered to. By doing so they have been able to make improvements hitherto practically impossible. The compound engine of the White car mounted under the bonnet and with its condenser at the forward end in place of the ordinary cooling coil of the gasolene machine is certainly an instance of the sort, and bids fair to be a type of steam car which will attain marked reputation. The complete chassis has also been adopted by Grout Bros. and the Locomobile Co. In fact, the whole general tendency of the steam vehicle is toward simplicity, economy in operation, great accessibility and the perfection of all delicate parts with increase in speeds and weights. Details of engine construction are more carefully worked out and conform to the best steam practice. The wheel bases have been increased in length, and wooden wheels with heavier general construction will naturally follow on the steam touring car. Even the light runabouts will hereafter assume the general lines of the gasolene car if only by the adoption of box dashes for lockers or enclosing an extra seat. The water and air pumps will be of the steam operated type, with either automatic or hand control arranged in more accessible positions and of improved type. The Mobile Company of America had the most unique arrangement of this part of the mechanism, and provide both a steam operated water and air pump driven from the same crank shaft and provided with a crank when it is necessary to use them as hand pumps. These are located on the inside of the dash in a most accessible position. The Locomobile Co. arrange their pumps directly under the footboard, where they may be reached by raising a trap. It is not to be inferred that the light runabouts will not continue to be popular, but it might be predicted with almost absolute certainty that the heavier type with compound engines, condenser and every accessory used in the best steam practices will become more and more popular. The Mobile Company have the most ingenious form of regulator for the boiler water. It is a counterbalance, positive in its action and dependent for operation upon the evaporation by steam of a small quantity of water which ordinarily keeps the regulator in balance.

The exhibit of the steam fire engine of the International Fire Engine Company illustrates the possibilities in steam practice to quick acting machines of large power designed to be handled by men conversant with the steam engine. The absence of steam operated trucks and fewness of delivery wagons would indicate that steam will not be popular in this class of machines; in fact, there is little to expect in the delivery line outside of the electrically propelled vehicle.

Electricity certainly has its best foot forward, so to speak. Nothing could be more beautiful or perfect in operation than the light electric runabouts of the Baker, Ajax, Columbia, Studebaker and the others. Their control is flexible, yet positive, and they may be handled with impunity even by a novice. To be sure they are not touring cars, and will never be used for touring purposes; but for light city use and for traction purposes they will undoubtedly grow to magnificent proportions. Although the electric vehicle was one of the first in the American field, no very radical departures in general practice were brought out at this year's show. There are, of course, tendencies, and these, generally stated, are along the line of perfection. Motors are being more condensed and made of greater efficiency. The general movement is toward simplicity, increased capacity of operation and as low weights as are consistent with the required practice. Ball bearing motors are popular on the light runabouts, and these in almost every instance use the chain drive to a divided rear axle. The disappearance in many cases of the under running gear with reach construction indicates that the reachless gear will probably meet with favor. The underslung battery on heavy vehicles solves the problem of securing full body space, giving very low weights and obviating all troubles from acid slop. The divided battery will also be popular in the tonneau cars, and gives distribution of weights over both axles which is almost essential. In the matter of commercial vehicles, the adoption of electricity is assured, for heavy trucking particularly. There is no question but that with the limited speed of these trucks and their ease of control they are the only ones which can be intrusted to drivers of ordinary skill and average comprehension. No matter who is the man, if he is given comparatively high speeds and high powers he will abuse them, and will have trouble in operation. With the electric vehicle there is little for the operator to do except use his controller lever with ordinary discretion and see that his batteries are on charge as often as convenient. For truck work the batteries may be kept fully charged by simply inserting the charging plug whenever the vehicle is standing before the warehouse. Controllers are being very much simplified, and are of the rheostat type to a great extent. The electric vehicle is certainly becoming more popular, and with it an unusually quick control of the vehicle may be maintained. As yet the Exide battery seems to be the prevailing type, and is almost universally used.

The entrance of the great Westinghouse Manufacturing Co. to the automobile field assures an unusual growth for the electric vehicle. This company, one of the largest manufacturers of electrical apparata, are designing special motors and all necessary equipment of the electrical sort for vehicles. Their product will without doubt be of the reliable and substantial sort, which has secured success in the electrical field.

Without doubt the greatest advance in the automobile art is in the gasolene car. It certainly is featureful, and although the reports of the Paris show echoed here indicated marked improvement of the foreign car, the New York show proves that American manufacturers have not only assimilated such advantageous features of the foreign built car as were necessary and desirable, but have improved on the details of foreign creations.

Generally speaking, there is a distinct ten-

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dency toward greater accessibility. Of course the four cylinder upright type of engine is a predominating feature of new big cars, and with the sliding gear transmission and automatically controlled engine gives a vehicle control of unusual elasticity. The complete chassis is, of course, the vogue, and by its use all parts of the mechanism may be disposed to the best advantage, and in the most accessible positions. It would appear that the foreign builders are not quite up to American standards in this respect. The latest American builders are placing their valves and igniter plugs where they may be removed and inspected in an instant.

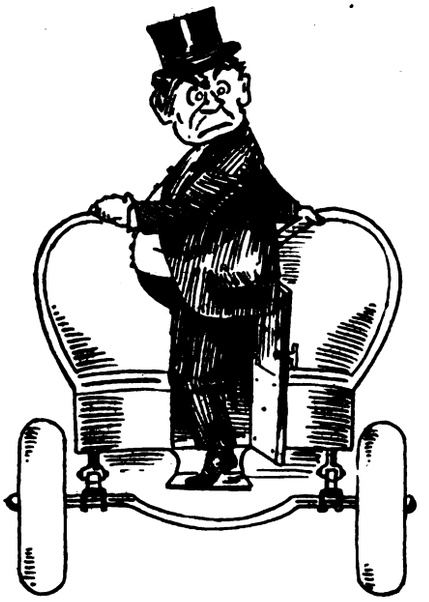
Slow speed engines are the rule, and the automatic regulation of the engine is assured. American builders of touring cars almost without exception will use some form of automatic governing, probably the ball type, and will govern either by controlling the lift of the inlet valves or by throttling. In some instances the ignition is governed automatically and simultaneously with the throttling, but in any instance of automatic governing the accelerator will play an important part. What could be more ungainly than the racing of a four cylinder engine when the gear and clutch are thrown out? There is no necessity for it. The governor will take care of engine speeds up to certain limits, and by combining with it a hand operated adjustment or correction for the governor and ignition the speeds of the vehicle may be readily accelerated. Except on the lighter vehicle of the runabout type, the planetary system is on the decline and the sliding gear with single lever control and direct drive upon the high gear is being almost universally adopted.

The divided rear axle is again a bone of contention among gasolene vehicle builders. Much is said for and against it both when used in connection with the driving chain or with a universally coupled shaft and bevel gears. The divided rear axle has certainly not yet taken the place of the countershaft and individually chain driven wheels. On the contrary, notable improvements have been made in countershaft constructions. Wherever possible the parts are made interchangeable, and drop forged squared couplings are used between the differential and the driving sprockets. The gear cases must have some support, and why not support them on the countershaft, giving it all the necessary strength of support and enclosing all of the driving mechanism except the sprockets and chains?

While the four cylinder upright type of motor is popular on the heavier cars, the horizontal engine is, if anything, gaining on lighter cars of the runabout type, and in one instance a double cylinder two cycle motor is to be found. These all point to a general advancement of the light runabout, and it can almost be stated with warrant that while the heavy touring cars are for the time popular and the predominating feature, it is but a question of time when American practice, urged on by the general demand, will produce light runabouts of the gasolene type, which will be low in price, in weight, and will have little, if any, complications. The most fascinating work in the gasolene vehicle will be in the production of the light runabout. Its details will assuredly be worked out to a nicety, and every part will be made as nearly as possible interchangeable, and as of compact and light form as will be consistent with the duties and work demanded of it.

The furore created abroad by the mechanically operated inlet valve, which was echoed here, had all its substance removed by the show here. The number of American builders who are employing valves of the sort was clearly brought out, and amazed even many in the trade. In one marked instance the maker even dispensed with the ordinary cam method of opening the exhaust valves. This is on the Columbia car. In place of the ordinary cams, eccentrics are used, which open and close the exhaust valves with positive movements, there being absolutely no pounding and consequently no noise. With the present lines of engine construction in view, it seems very doubtful that the mechanically operated inlet valve will be universally adopted. All makers are placing their valves in accessible positions; they are well made, ordinarily kept cool, and there is little liability of their sticking; but even if they do, their stems usually protrude through the engine casing so that they may be "tickled" and released.

Those Doll-Size Doors.



During the show it was abundantly demonstrated by the discomfiture of many that there is as much truth as caricature in this illustration. The doors of some of the touring cars were apparently designed for dolls—and it did not require a particularly plump person to "stick" in them. The antics of people in such positions was a source of no little amusement.

The carburetter situation is another much mooted question, yet a careful examination of the entire show indicates that the float feed type of carburetter is that most generally adopted. To be sure, in some of the smaller vehicles a "Phœnix" type, using a baffle plate and needle valve, which operates the oil vent on the suction stroke, but these were isolated instances. There is one feature of the carburetter, however, which is evidently new and is bound to stay. It is the so-called compensating type. The Berg car has one of the most perfect examples, and, of course, while using the float feed and mixing chamber it also provides a means of automatically varying the inlet area connecting direct with the atmosphere as the position of the throttle and consequent speed of the engine is varied. On the Berg the compensating carburetter is connected up to the engine governor, which is of the ball type. Several different methods, varying slightly in construction, are used by others, securing the same general result. An ingenious form of compensating device is that used in the Electric Vehicle Company's gasolene touring car. A direct air inlet is normally closed by a counterbalanced vein and is swung backward and forward to a greater or less degree dependent upon the suction of the engine.

The reinforced wood frame in the chassis constructions will undoubtedly give place to the angle or channel iron frames of comparatively light yet rigid construction. The general tendency for the coming year's business is indicated, so far as gasolene machines are concerned, by the very radical departure of the Packard Company. Formerly they were close adherents to the horizontal motor, now they exhibit a most perfect type of four cylinder upright motor, a complete chassis, and well worked out driving mechanism throughout. Of course there is no doubt that the Linousine type of body or its equivalent, the canopy topped tonneau with glass front guard, will become popular. For touring cars there should be increased demand for vehicles in which the occupants are somewhat closed in and protected in extreme weather.

The marked preference for the honeycomb type of cooling coil, used in many instances for forced circulation of air induced by a fan, and the tendencies toward wheel steering, wood wheels and detachable tires were so apparent as to scarcely require remark.

Trainload of Exhibits Shipped West.

A special freight train of fourteen cars, placarded with the names of the automobiles they contained, pulled out of New oYrk City on Tuesday morning, en route for Chicago and the show that opens there on February 14. It was the train specially chartered by the N. A. A. M. to carry the exhibits West from the New York show. The schedule for the train included stop overs at night at Albany, Syracuse, Buffalo and Cleveland. Four cars will be dropped at Cleveland.

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The Show a Gigantic and Unmarred Success

Large Attendance and Unexpected Heavy Sales Leave Every One Satisfied and in Good Humor · What the Exhibitors Report.

What was unquestionably one of the most successful and impressive industrial shows ever held in this country came to an end at Madison Square Garden on Saturday night. A considerable measure of success had been looked for; but it proved to be entirely inadequate. From the opening of the show until its end the tide rose and swelled, until it set a mark so high as to seem beyond the reach of any subsequent one.

Everything necessary for a successful exhibition was there. No such showing of automobiles, parts and accessories has ever been seen here. It was marvellous, a revelation of the progress that has been made in fifteen months, and even more significant as an indication of what is to come. As if in recognition of its astonishing character the trade and public poured into the Garden from one Saturday night to the next, both bent on business. Consequently sales were made at a rate almost undreamed of previously, and the trade received a fillip that will spur it on to fresh and hitherto unheard of exertions.

No one expected such an out of town attendance as was present. The hotels were overrun with applicants for rooms. Only Horse Show week afforded a parallel for it, and the most popular class of hotels filled early and were obliged to turn applicants away.

Figures showing the paid attendance each day tell the story eloquently. There were 30,292 paid admissions, as follows:

Saturday, January 17	1,773
Monday, January 19	3,432
Tuesday, January 20	4,522
Wednesday, January 21	5,006
Thursday, January 22	5,483
Friday, January 23	5,165
Saturday, January 24	4,911
Total	30,292

There were in addition some 14,000 trade and complimentary tickets sold and issued, the bulk of them being the former, thus bringing the total to nearly 45,000. At the last show, in November, 1901, the attendance was less than one-half this.

Of this attendance the most remarkable part was that of tradespeople. They came in droves. Day after day they thronged the Garden and besieged the booths of exhibiting concerns. Old agents wanted to renew contracts, new ones begged to be allowed to enroll themselves. All were clamorous for automobiles. City and country vied with each other in the endeavor to obtain an adequate supply. Some were obliged to depart unsatisfied; but the majority met with better fortune.

All along the line the story of excellent business done is the same. No exhibitor with novelties or meritorious goods lacked for customers. Before the week was over there was almost an embarrassment of buyers, and assertions of outputs sold were frequently met with. The buying was not confined to dealers in automobiles, etc., but embraced the outside public—the individual users—as well.

From a round of the show during Saturday afternoon and night made by Motor World representatives, the appended impressions and expressions of opinion were obtained:

Thronged as the entire Garden was, it seemed throughout the week as if the crowds in the restaurant were bigger than anywhere else. The magnificent exhibit of Columbia vehicles, made by the Electric Vehicle Co., was, of course, one of the chief centres of attraction there, and it is not easy to determine whether the electric types or the new gasolene car received the most attention.

Certain it is, however, that the latter, one of the noteworthy cars of the show, was critically examined; and equally certain that it elicited only encomiums. Whether viewed as a whole or in detail this was true. The many ingenious devices, designed to add to the efficiency or convenience of the car, were commented on, and the attendants were kept busy showing and explaining the hand removable valves and spark plugs.

The company has every reason to feel satisfied with the material outcome of the show. Sales aggregating a very large amount were made, all classes of vehicles sharing in this popularity. President Day and Secretary Budlong expressed themselves as being highly pleased with the result.

Success of a pronounced character rewarded the efforts of Thomas B. Jeffery & Co., makers of the Rambler touring car, to bring home to show attendants the merits of their new model. "Factory output sold," was the familiar cry before the week was over, and in this case it was based on fact. The concern had to refuse orders, and from now on the entire factory efforts will be devoted to turning out cars enough to fill the orders already in hand.

"Our only trouble now will be to get the goods through the factory," said T. B. Jeffery in confirmation of this. "We have sold all we can possibly make, and could have sold double the number."

"We have sold 400 cars here, and could have made it 1,500 just as easy," confirmed Sales Manager Bennett. "In fact, it would frequently have been less trouble to take orders than to explain that we had none to sell. Each order has been accompanied with a deposit, as this is the only way we do business."

Even when the jam seemed thickest in the Garden there was one stand where it was worse than anywhere else. This was at the Olds booth, the "daddy" of runabouts having, if anything, grown more popular than before.

The Oldsmobile chassis was, of course, a centre of attraction. When early in the week a belt was attached to the flywheel and the engine run slowly by means of a dynamo, it became a difficult matter to get near enough to it to examine it, so great was the eagerness to see a model gasolene engine in operation.

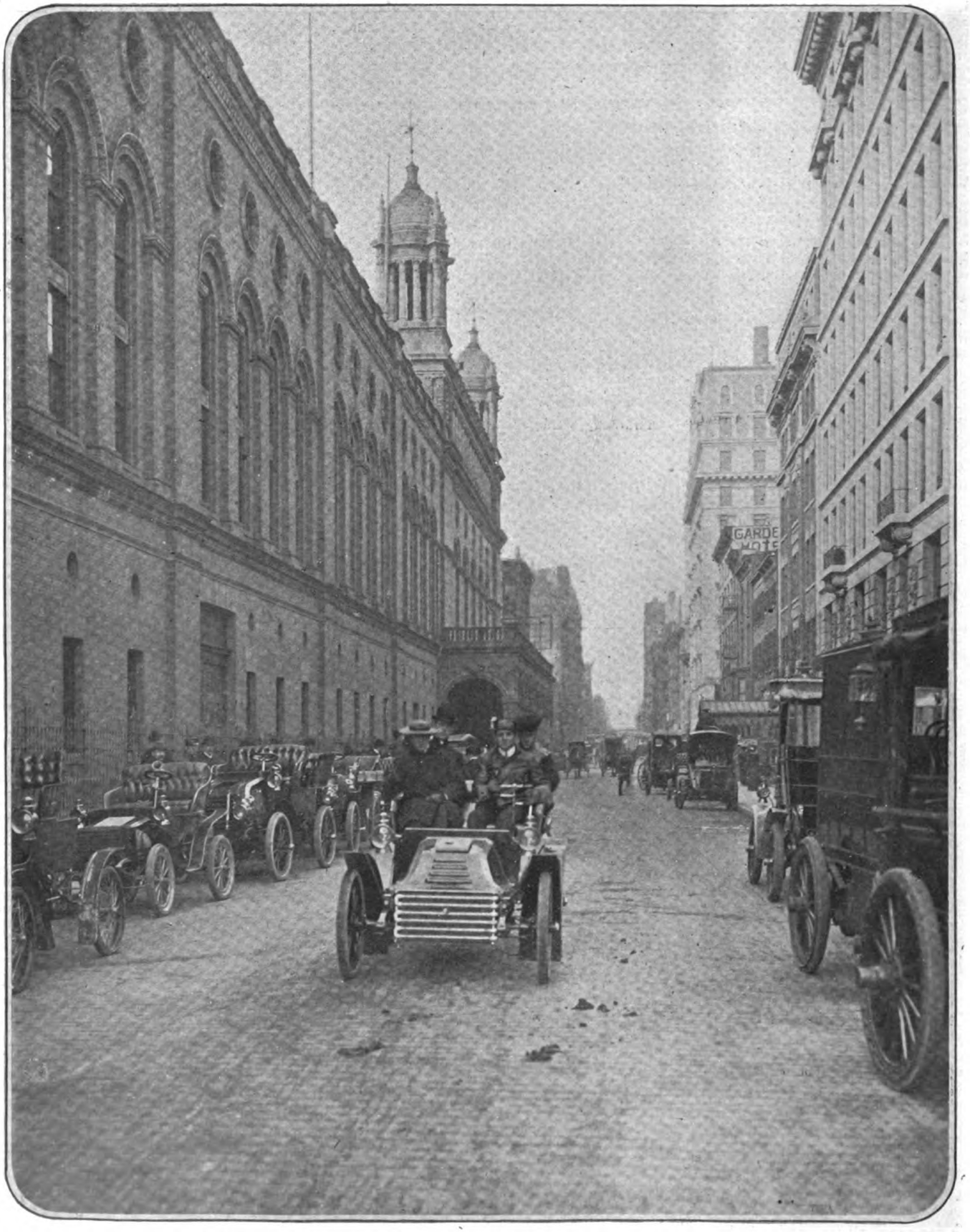
The slow running enabled an excellent view of the engine to be obtained. The action of the valves—both the intake and exhaust being actuated mechanically by two cams mounted on the same secondary shaft was so simple that it could be seen at once. Second only to the chassis in interest were the Olds tonneau and physician's car. They were examined by large crowds throughout the week, and received much favorable comment. The Olds souvenir, a stickpin having mounted on it a miniature Oldsmobile, was eagerly sought and given out freely.

In the matter of sales the Olds record was a remarkable one. As officially given out, they comprised 3,500 cars of the runabout and 450 of the tonneau type, or considerably in excess of $1,000,000 worth. In the face of such an impressive showing the emphatic success of the show cannot be questioned.

"Well, after looking over all the novelties in improved and complicated construction I'm back to buy a Winton. There are a lot of splendid cars here, and it stands to reason that many of them are all right and will stand up. At least I think so; but with the Winton I know it is all right. It has been proved reliable year in and year out, and when I get it I feel satisfied that I am taking no chances. It has improvements enough and is a sure stayer."

A Motor World man overheard a man

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THE DEMONSTRATING CARS OUTSIDE MADISON SQUARE GARDEN.

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speaking substantially as above to Percy Owen at the Winton space, and later he asked Owen if he had many customers like that.

"Bless you!" answered the ever pleasant Owen; "they come here just that way every day. It is an old and familiar song to us now, that one. It is natural that it should be so, too. Don't you recognize the fact? We were pioneers in the field, and have kept to the front. The speed and stability of the Winton have been demonstrated in so many hundred different ways that it would be strange if persons did not come to regard our product as standard."

Naturally the Winton space, with the record holding "Bullet" and "Charley" Shanks and Percy Owen and Alexander Winton himself there, was a centre of interest day and night. The public eye, caught and focussed by the genius of Shanks, was kept upon the Winton cars all the week, and if the concern had wanted to permit of speculative dealings in the vehicles there is no telling how many cars might have been sold. The Winton policy, however, is opposed to selling in quantity to agents who want to speculate on deliveries. The idea is to protect the public from the exaction of premiums. As Percy Owen put it: "We do not deal with agents, so far as letting them place orders ahead is concerned. Those who want to buy have got to have a bona fide cash customer ready for every car. This is pretty near to retailing, and yet we sold 150 cars during the week; those cars, you understand, are to go directly into commission. They are not to form stocks for any men. They are to go direct to the consumer, or from an agent direct to a customer who is waiting."

In spite of all the talk of racing that was buzzed into his ears, Mr. Winton found abundant time to explain the details of the new touring car, and if the mechanism of any car in the show was set forth more lucidly it was not discovered.

A show without an exhibit of "Baker Beauties" would be almost like "Hamlet" with the melancholy Dane left out. The usual admiring comments upon the clear cut lines and superb finish of the Baker electrics were heard throughout the week, and were frequently followed by more substantial evidence of approval.

"We are very well satisfied with the show," said Manager Goss in reply to the Motor World man's question. "We have done good business, and a great deal of it. Just how much we cannot tell until we have rounded up. It has come from both the trade and the public, too, which is the gratifying part of it."

"There is only one thing we have to complain of, and that is too much business," was the exclamation of W. A. Richwine, of the Autocar Co. in reply to the stereotyped inquiry.

"We have sold all the cars we can make, and the demand is nowhere near filled. As you know, we sell our product to eight large agents, each of whom has considerable territory. We apportioned our cars among them, giving each as much as we could, and now they want the allotment increased. One of our agents is getting three cars a week through the winter. At the show he came to us and said he wanted six. Now, to give them to him we would have to take them from some one else, and how are we going to do that when the others want more cars instead of less?

"Here at the show we have been booking orders for our agents, and the number of these orders and the range of country covered by them show how general the demand is."

No one anticipated anything else than a superb exhibit from a firm of such national reputation in carriage building as the Studebaker Bros. Mfg. Co., but there was something even more delightful about the elegance and finish of these cars and the advanced features of construction in them than could possibly have been anticipated. The tubular frame, with its elliptical springs in the rear and the semi-elliptical springs in front, and the method of pivoting the rear spring to the frame so as to give freedom to the axle movement, was a constructional feature that made a hit with the mechanical sharps. The name of the concern itself, and the knowledge that it was their first appearance at a show, were enough to keep the space crowded. Two runabouts and two Stanhopes were exhibited, and orders for a total of 250 vehicles were taken during the week.

The one stand in all the show where the three different forms of power were offered, that of the International Motor Car Co., was like a beehive all the week. It was the refuge of both those who were "wise" and those who wanted to learn, because it was a space where all differences and virtues of the respective powers was explained without "knocking." Eleven machines were on show, one steam and four gasolene Toledos and six Waverley electrics. The gasolene vehicles were of two, three and four cylinders, and replete with striking improvements. Manager Schaaf had wisely divided the booth into two parts, with the electric machines taking one-half and the others on the opposite side. The four-cylinder car of 24 horsepower, with copper water jackets, with removable cylinder heads and valves that can be removed about as easily as a hood lid, attracted continual attention, and a Motor World man tried probably a dozen times without success to catch Manager Schaaf at leisure to have a chat. He did not know what leisure was during the entire week, and it was small wonder that on Saturday night he could report bona fide sales of 200 cars.

Novelties are always good drawing cards, as was shown at the White stand during the show. The steam tonneaus were undoubtedly the centre of attraction, although the delivery wagon and the time tested White Stanhope were far from being neglected. The stand was thronged all the week, and excellent business was done, both the trade and the user being in evidence. The gathering of the White forces was, as usual, an imposing one, including Windsor T. White, Manager Deming, of New York, and Manager Lowe, of Boston.

"Our sales totalled $300,000, and were pretty evenly divided between steam and gasolene," was the way Advertising Manager Kingman of the Locomobile Co. of America summed it up for the Motor World representative.

It was only necessary to watch the attendance at the Locomobile stand to obtain a good idea of the favor accorded the goods shown. In addition to the delivery wagon and other steam novelties, the limousene and canopy top gasolene cars were carefully inspected, and the way they bore the inspection must have been highly gratifying to A. L. Riker, who designed them and superintended their construction. President S. T. Davis, jr., was also a frequent attendant.

One of the first American makers to adopt the vertical engine in front type of car, the Peerless Motor Car Co., reaped the reward of their foresight last week. Their fine showing of modern cars, leading up to the 60 horsepower monster, attracted wide attention, and was followed by a more substantial result in the shape of orders. General Manager Kittridge and Messrs. Morrison of the Peerless company, and A. L. and G. A. Banker and C. G. Wridgway, of the three Banker establishments, looked after the visitors. The former stated that he was more than satisfied with the sales made during the week.

The Haynes-Apperson car has a clientele of its own, and no greater enthusiasts than they can be found anywhere. At the show, therefore, the exhibit of the well known Kokomo concern was an object of much interest. One of the oldest and most thoroughly satisfactory cars on the market, the changes made in this year's models seemed to hit the public taste. Consequently President Ellwood Haynes and his corps of assistants were kept busy during the week, and a gratifying sheaf of orders were in hand at the end to lend substance to the encomiums pronounced upon the cars.

Good lamps, designed on the most modern lines and pushed by such adepts as Messrs. Wells and Keck, could not do otherwise than sell readily, which is another way of saying that these gentlemen from remote Kenosha are entirely satisfied with the way Solar lamps "caught on" at the show.

Only a single car was exhibited by the Moyea Automobile Co., but it was one of the most admired at the show. It was as much as President Cryder and his corps of assistants could do to satisfy the curiosity of inquirers who wanted the features of the

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car explained. It was a car for the connoisseur, although even the uninitiated could scarcely fail to be impressed by its thoroughly modern design and superb finish. Consequently, good business was done, and the car will undoubtedly find its way into the possession of users who are looking for something out of the ordinary.

No harder worked man was at the show than General Manager Van Wagoner of the Century Motor Vehicle Co. He was kept on the jump all the week explaining the good points of the new Century gasolene runabout and demonstrating its running qualities outside the Garden. The substantial appearance of the car, together with its low price, made it one of the best sellers of the show, a number of British orders being booked along with the domestic ones.

"We have sold our output, and more than that no one could possibly expect," said Secretary F. H. Elliott, confirming the report of good business.

That the F. B. Stearns cars are good value has become almost an axiom, and the attention they received last week proved that the fact was generally recognized. Big, powerful, comfortable looking- cars, the soundness of their construction was apparent. The factory capacity has been increased, but it will be taxed to meet the demands made upon it in consequence of the batch of fat orders that were secured at the show. The well known F. B. Stearns and Sales Manager McCrea departed from the show well pleased with the business that fell to their share.

"Pleased with the show?" repeated General Manager W. D. Gash, of the Searchmont Automobile Co. "We certainly are. We have sold a gratifying number of cars, so many that it will be all we can do to turn them out.

"We have made unexpected sales, too," he went on. "Now, here is an order for five cars from So-andSo," mentioning a dealer in a Western city notable for the number of its automobile makers. "We had no idea of securing representation there. But the dealer wanted our cars, and this is his signed contract."

For a concern making its initial appearance at an automobile show, and with a new car, the Kirk Mfg. Co., makers of the Yale gasolene car, did remarkably well. A considerable number of bona fide sales were made, and General Manager Ezra E. Kirk was jubilant over the result.

"We are delighted with the show," he said. "Why, we even sold the two cars we had on exhibition, their purchasers being determined to run no risk in the way of deliveries."

To many of those who visited the show last week the Darracq chassis was a revelation, just as it was one of the features of the exhibition. It made plain what a really modern French car is like, and cannot fail to extend the sale of the Darracq car in this country. Messrs. Cook and La Roche expressed themselves as pleased with the show, the latter stating that a gratifying number of sales had been made.

When Colonel Pardee started out to sell the output of American gasolene automobiles made by the American Motor Car Co., Cleveland, the task seemed a formidable one. The car was new and almost unknown, and it looked then as if the only trouble would be to make the selling end keep pace with the producing end. A few months of hard work has changed all this, however. The show evened up matters, and any further marked increase in sales will put the shoe on the other foot. In addition to Colonel Pardee, Engineer Dunham of the American company was in attendance.

The only two cycle engine at the show, the Elmore, naturally attracted a lot of attention. But that fact is not the sum and substance of its excellences, although the genial J. H. Becker never tires of extolling this feature. The car is a good looker, stanch, and reliable, and at the same time low priced. Not even its late arrival—for which the New York Central Railroad must yet answer to the irate Becker—prevented sales being made to a gratifying extent.

Over 4,000 toy automobiles were given away at the show by C. F. Splitdorf, they fairly dividing honors during the latter part of the week with the much talked of giant spark demonstration. The latter attracted wide attention, as, indeed, it could scarcely fail to do.

With soundly constructed goods to back this brave show, it is not surprising that business was done. Such was the case, C. F. Splitdorf being authority for the statement.

On price alone the General tonneau touring car woud prove a ready seller. It is not often that such a car, fitted with a double cylinder motor, retails for $900,and when, in addition, it looks well and acts well, the result is easy to prophesy. "Out of the first twelve demonstrations we gave outside of the Garden," said Manager Penning, "twelve customers were secured and twelve sales made. I need hardly say, therefore, that I am much pleased with the show."

To say that the new Packard car created a sensation is to simply state a fact. Messrs. Packard and Weiss were kept busy responding to congratulations extended them. Many who came to criticise remained to praise. But the old reliable models were not lost sight of. On the contrary, they were critically examined and sold freely. Advertising Manager Walden was one of the busiest men at the show—a large statement, but a true one. He did everything but sleep in the Garden, and never tired of explaining the merits of the Warren company's product. Good business was done in both the old and the new cars.

Good business is reported as being done in Northern cars, represented at the show by Homan & Schulz. Sales Manager Gunderson, who was in attendance, expressed himself as being decidedly pleased with the result. The fine appearance of the Northern, combined with its low price, makes it an attractive proposition, and one not apt to be overlooked. A. T. Fuller, Boston agent for the Northern, was also in attendance.

There were no long faces at the Waltham stand on Saturday night. The new Orient buckboard scored a popular success, its sales being so large that a halt was finally called. The new touring car was also a good seller, and General Manager Gaylor expressed himself as being highly pleased with the net result of the week's selling.

With runabouts at $750 and touring cars at $1,250, it is not surprising that the Conrad gasolene cars, made by the Conrad Motor Carriage Co., should "catch on." It did, and a goodly number of sales resulted, traceable directly to the many excellent features possessed by the cars. President Conrad, Secretary Puget and Sales Manager Olmstead were all in attendance, and were kept busy looking after the host of interested inquirers who thronged the booth.

Berg cars made a hit, and before the week came to an end President Berg stated that the entire output was sold, and it had been decided not to show at Chicago in view of the inability to accept further orders.

The plan of selling the chassis alone, giving the purchaser the option of selecting his own carriage body, "caught on" at once, and the policy bids fair to be adopted by a number of other concerns.

In view of the career of the Stevens-Duryea car in the recent past, it was only natural that it should attract much attention at the show. With this initial advantage, and such a strong factory representation as President Page, Superintendent Duryea and Sales Manager Hildebrand to look after it, the satisfactory business resulting was fairly to be expected.

The drawing power of parts or fittings in motion was strikingly shown at the Veeder stand. Odometers run at an astonishing velocity by dynamos, and the new Tachometer proved magnets that drew crowds. The latter is a distinct advance in speed indicators, and the attention given them demonstrated that their merit is recognized. D. J. Post was in charge of the exhibit, as usual.

The aggressive policy conducted by Grout Bros. has borne good fruit. Their great courage in producing such a radical innovation as a steam tonneau was recognized and rewarded last week. The car that stood for the modern idea in steam construction—the tonneau already described and illustrated in these columns—was the cynosure of all eyes.

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Its clean cut lines, with brass tube protectors for the condenser and other delicate mechanical parts, which caused it to be dubbed the "locomotive," compelled approving comments, and must have done much to warm the cockles of the hearts of the Messrs. Grout, both of whom were present. This car, and also the regulation steam models, which have met with such a ready sale abroad, as well as here, met the taste of steam vehicle users, and some very gratifying contracts were booked as a result.

Some interesting features reveal themselves on a close inspection of the tonneau car, which is claimed to have been the first one produced, although one of another make had been pictured the previous week. The throttle is attached to the steering rod under the steering wheel, and consists of a wheel a size smaller than the former and directly under it, arranged to slide up and down on the steering rod and locked by a foot latch in position. The device is a most ingenious and mechanical one. The reverse is by foot lever instead of the usual hand side lever.

The boiler is placed in front under the bonnet, while the engine is positioned horizontally under the footboard. The drive is by individual chains from a counter shaft to the rear wheels. The boiler has a fusible plug, which prevents the burning of the boiler.

At the last show the Prescott steam car was almost unknown to the general public. To-day its reputation as a time tried, thoroughly reliable and dependable medium price car is firmly established. Consequently the task before Frank F. Weston last week was a much easier one. From his vantage point in the restaurant he worthily upheld the cause of steam, and found many to listen to him.

"We did business both with agents and with individuals," said F. F. Weston. "In the latter case the sales were made on behalf of the agents, of course, in one case four sales being booked for the account of one agent. You may say that we are very well pleased with the show, and since it have closed some deals that were pending when the show closed."

One of the few departures from the standard types of gasolene engines was found at the stand of the Shelby Motor Car Co., and as a consequence it attracted much attention. The greatly increased power claimed for the engine, which has two opposing pistons in a single cylinder, makes a good "talking point," and the substantial appearance of the car caused it to make a favorable impression. President Beardsley of the company was much pleased with the reception met with.

With two such drawing cards as the Diamond single tube and detachable tires, and a real novelty in the shape of a non-blooming inner tube, the Diamond Tire Co. did not lack for business. A census of the tires made by the Diamond Co. showed that 41 per cent. of the cars exhibited were fitted with their tires. Consequently they are in high feather, and point to this remarkable showing as proof of their claims of superiority. Among the officials and others in attendance were Messrs. W. B. Miller, O. S. Tweedy, Sam. Randolph and O. J. Woodward.

During the show last week an impromptu testing ground was made of the little hill over the New York Central Railroad at Forty-eighth street. The grade is only fairly steep, ranging from 22 to 26 per cent, but the car must approach it slowly and under a disadvantage. Among the few cars to surmount it was a Kensington, fitted with a Kelecom motor. To demonstrate its capacity it was driven up the hill, first frontward and then backward, a feat that resulted in a sale on the spot.

All the tire companies were well represented, the show being made a meeting place for sales managers and salesmen from all over the country. The Hartford Rubber Works Co.'s new metropolitan manager, Robert P. Parker, was there, as was the retiring manager, Brandt, and President L. D. Parker and Sales Manager Gilson. Hartford, Dunlop and Turner tires were all in demand, an extremely satisfactory business being done in them.

"Whitney standards" become better known each year, as well as better liked. An examination of the chains produced by the well known Hartford concern explain why this is the case. The excellence of the designing and the soundness of the workmanship insure the best results. Hence the Whitney order book is bulkier than it was before the show.

The Fisk Rubber Co. showed its detachable tire for the first time, and it scored an instant success. The method of attachment is novel, the tire being held in place on a flat rim by a clamping ring, making a secure fastening and insuring easy attachment and detachment. Messrs. Fisk and Dunn were in attendance, as was E. Broadwell of Detroit.

There was no lack of visitors or business at the stand of A. H. Funke. Kelecom motors, Autolyte lamps and Baldwin spark plugs were in demand throughout the week, and Mr. Funke was so pleased with the net results that he engaged space for the 1904 show.

"Our sales will not fall very far short of $100,000, including some deals that were practically made but have yet to be closed. That being so we cannot make any complaint, but on the contrary are very well pleased," was the way Manager Kimball of the Central Automobile Co. put it.

At the Goodrich booth Messrs. Howard E. Raymond, Otis E. Cook and Cy. Tullis took care of the trade visitors. The "original American Clincher" tire, as the Goodrich is termed, was pushed to the full limit, and a very satisfactory volume of business was transacted.

Messrs. Harry C. English and J. G. Zeigler, who looked after the interests of the Reading Automobile & Gear Co., reported that Wyoma motors and gears had met with an excellent reception.

"Business has been all that we could expect," was the summing up of Mr. Zeigler.

Although new to the trade and public, the "Bann-Auto" wheel made a favorable impression, its peculiar construction seeming to insure more than ordinary efficiency. Patentee and Owner Bannister has the greatest faith in the wheel, and considers that its reception at the show warrants it.

With two exhibits—one in the restaurant and the other on the main floor—to look after, the National Motor Vehicle Co. were kept busy. With eleven models of National electrics, many of them new, it was to be expected that good business would be done, and Sales Manager Hay stated that such expectations had been realized.

To get acquainted with the trade was the task of President Ray of the Ray Automatic Machine Co. set himself last week, and he succeeded admirably. The Ray hoods, fenders, mufflers, etc., are better known as a result, and that great desideratum, orders, followed quite naturally.

"Sperry batteries will be ready for delivery in March," such was the cry of General Manager Devine of the National Battery Co., and the interest with which the announcement was received augurs well for the sales of this well known storage battery.

The Hoffman gasolene car is something of an eye opener, price considered, and President L. E. Hoffman, as positive as ever, was present to make plain that there was something besides price to recommend it. He succeeded to his entire satisfaction.

Diamond chains were found on many cars at the show last week, and as a result of the vigorous campaign conducted by President Garford, Sales Manager Colt and Advertising Manager Wardrop, all of whom were present, an increase in the number is likely to take place.

"Yes, we have done a fine business, ten times as much, in fact, as at the last show." Such was the emphatic assertion made by Charles E. Miller to the Motor World man. "The sales have been on all lines of goods. No, we have no 'kick' coming."

Both from its size and its striking Colonial decorations, the Mobile stand was an attention-compelling one. The many new patterns of steam cars shown added to its attraction and drew crowds of interested users to that vicinity throughout teh week.

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"We did business," said General Manager Gallaher of the Mobile Co., "and it was about equally divided between the trade and the individual users."

In spite of its large factory capacity, the Cadillac Automobile Co. is sold out. By the middle of show week the order went forth to decline further orders, and thereafter applicants were "turned down" ruthlessly. Sales Manager Mitzger was naturally elated at the success attending a venture launched within a year, and, like so many other sales managers, will henceforth turn his attention to getting out the goods. He was ably assisted at the show by F. C. Riggs, a recent addition to the Cadillac selling forces.

As purveyors of such fittings as wood and wire wheels, front and rear axles, steel rims, etc., the Weston-Mott Co. always merit and receive respectful attention. The show under notice was no exception. Under the capable direction of Fred. G. Mott, jr., buyers were taken good care of, and the result was reflected in the sales.

The two big motors shown by the Buffalo Gasolene Motor Co. were about as good arguments in favor of the company's product as could have been found. They looked extremely business like, and in no small measure accounted for the very considerable number of sales made.

With customers passing over the cash for Herz spark plugs in plain sight, it did not require the assertion of E. J. Willis to make it plain that he was doing business last week.

In addition to the old reliable corrugated tread tire that has entered into wide use, the G. & J. Tire Co. showed for the first time one with a smooth tread, which is likely to have a considerable sale during the coming season.

One of the earliest dealers, representing one of the oldest makes of cars, Kenneth A. Skinner, and his De Dions, were very much in evidence. A good showing was made of both complete cars and motors, and Skinner expressed himself as being very well pleased with the business done.

Greatly changed and improved, the new Crestmobiles are still marked by simplicity and low price. This accounts in great part for their continued popularity, which was demonstrated anew last week. President Davis and Manager Adams expressed their satisfaction with the result.

President F. C. Philips, smiling and debonair, talked Elwell-Parker electric motors, and was remarkably successful in convincing his listeners of their superiority. Result, a nice sheaf of orders.

"Yes, we did business, and lots of it," was the reply of "Governor" Castle of the Twentieth Century Mfg. Co., and his tone and manner showed that he meant what he said, and that Twentieth Century lamps were going well.

Although the Automotor Co. are not seeking large orders, the Messrs. Smith, who looked after the company's interests at the show, were well pleased with the reception accorded to the new Automotor, and the orders that followed in its train.

Shows without the Kelley generator and burner, and the ubiquitous C. E. Weaver to dwell upon their good points, would lose much of their naturalness. The one of last week possessed all three, however, and all around satisfaction prevailed.

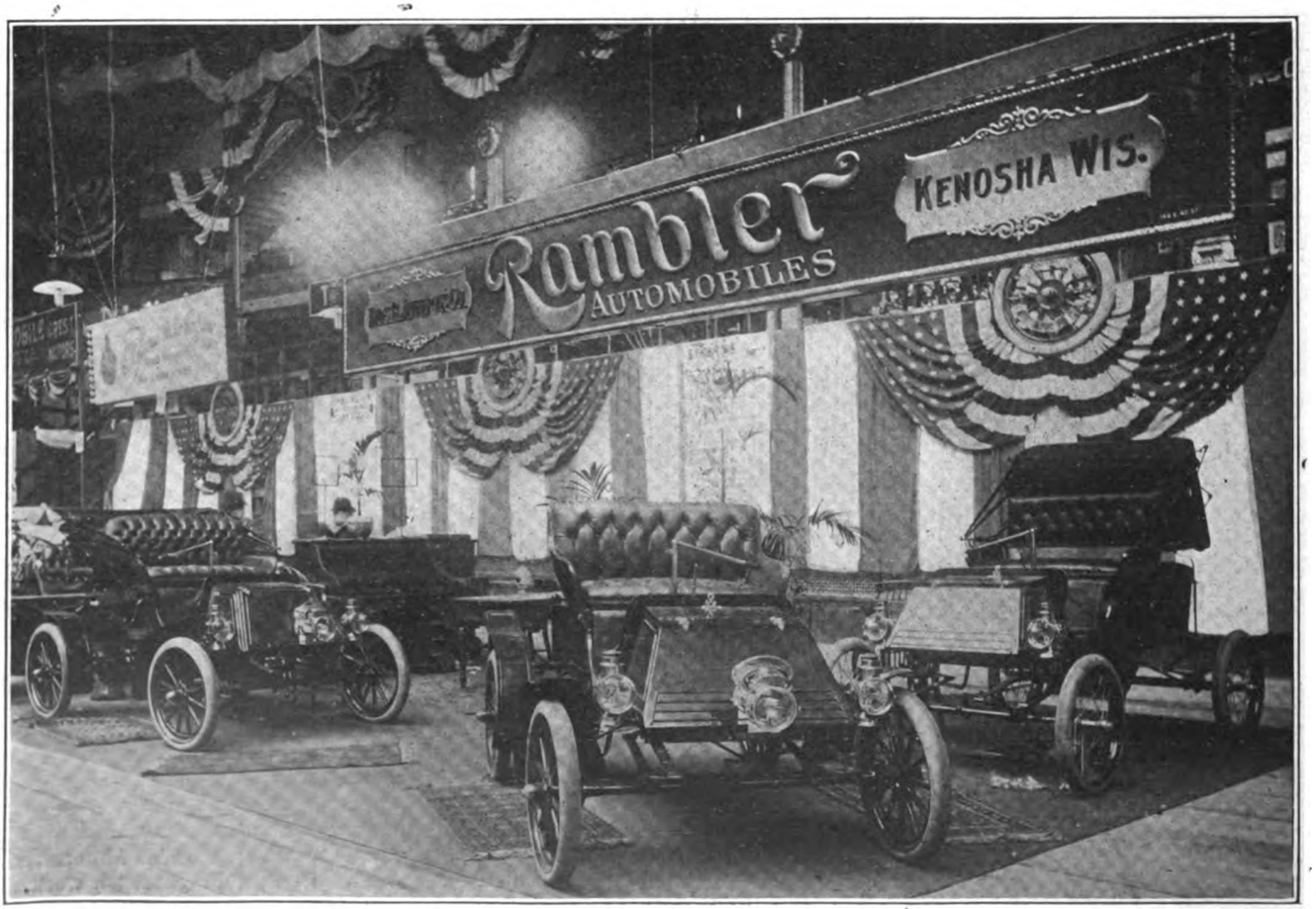
Manager Folger of the American Coil Co. was another member of the vast army of pleased exhibitors. The concern's spark coils, plugs, etc., had a great run, and there was satisfaction felt as a result.

F. C. Billings and Wallace Post, of the Billings & Spencer Co., were both in attendance and wore satisfied smiles at the end of the week.

"We are here mainly to educate people to the advantages of electrically welded tubing and rims," was the way W. H. Pirrong, of the Standard Welding Co., expressed it, "and are content with what we have done."

With the ballbearing idea firmly rooted in the public mind, it is not strange that the American Ball Bearing Co. were able to hold their heads high.

Barry & Hayes had in the Georges-Richard car an attraction that kept their stand well filled.



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WINTON AND FOURNIER SIGN

Series of Three Races Finally Arranged—First One for Set July 25th.

On Wednesday night Alex. Winton concluded to accept Fournier's terms for a race, or rather the compromise of his terms suggested by Winton on January 17. In fact, Mr. Winton declared that he would race Fournier under any conditions, and that he was willing to post $5,000 to bind the match at once. Accordingly it was arranged by the promoters of the races that there should be first one meeting at the Empire track, at Yonkers, N. Y., and then one on the Glenville track, at Cleveland. Should each win a race it was arranged that the third meeting should be on the track which had showed the faster time.

On Saturday night the representatives of the challengers and those promoting the contest got together at the show and the following articles of agreement were signed:

We hereby agree to compete in two automobile races, and, if a tie results, to have a deciding contest—the first race to be at the Empire City track, Yonkers, N. Y., and the second at the Cleveland Driving Park, Glenville, Ohio.

Saturday, July 25, 1903, shall be the date of the first race, with July 27 or the next available date in case of postponement. The distance of this event shall be twenty-five miles, standing start, contestants to start on opposide sides of the track, one at the wire and one at the half-mile posts, positions to be decided by toss of the coin; the winner to be that operator who completes the distance in the fastest time.

Should there be an accident to either machine in the first mile the race shall be stopped and restarted.

A date between August 1 and 12, to be decided by March 1, shall be the date of the second race, with the next available date in case of postponement. The distance of this event shall be twenty-five miles, standing start, machines to start on opposite sides of the track, one at wire and one at the half-mile post, positions to be decided by toss of coin; the winner to be that operator who completes the distance in the fastest time.

Should there be any accident to either machine in the first mile the race shall be stopped and restarted.

The winner of two races of the series shall receive a $1,000 cup, same to be supplied by the Empire City Trotting Club and the Cleveland Driving Park Association.

Should a third race be necessary the track shall be selected on which the fastest time is made in the two previous races. It is understood that Fournier and Winton shall not meet in a match or open automobile racing in the United States previous to this series.

Sanction and rules of the Automobile Association shall govern these races.

On either of the tracks named the race will be a terrible test of skill and nerve. The tracks will not hold the machines at their utmost speed, and it will be a question of which man can drive faster and make the corners safely. It will be a great race, with a severe temptation to the men to risk life and all in crowding the limit of safety.

Will Veto Marks Sprinkling Law.

Just at the time of going to press it is learned that Mayor Low, of New York City, after a hearing, has decided to veto the Marks' street sprinkling ordinance, passed by the Board of Aldermen on January 20. Tihs is the ordinance against which The Motor World has fought. It would preserve the present system of sprinkling, instead of having the work turned over to the Department of Street Cleaning, as was urged by the automobilists, horsemen and wheelmen. The ordinance was opposed before the Mayor by Counsel W. W. Niles, for the A. C. A. and N. A. A. M.; by the League of American Wheelmen, the Associated Cycling Clubs, Merchants' Association, West End Association and the City Improvement Society. Mayor Low said the sprinkling as done has been very bad, and that he though it never would be properly done until placed in charge of the Street Cleaning Department. He found several defects in the Marks ordinance and volunteered the statement that he would return it without his approval. A shipment of soap seems to be due now.

Parker Succeeds Brandt.

It became known during the last days of the show that E. H. Brandt, the manager of the two New York City branches of the Hartford Rubber Works Co., was soon to retire from all connection with the rubber company after a service of nearly a dozen years with it. Mr. Brandt resigned, and on Tuesday last he left the Hartford company and stepped into the position of manager of the United States Fastener Co., which by purchase and consolidation now practically controls all patents on the various styles of clasp fasteners for gloves, pocketbooks, shoes, etc. In his new capacity Mr. Brandt will have his headquarters in Broome street, New York. He is succeeded in the rubber company by Robert B. Parker, who comes from the Hartford factory equipped with a thorough familiarity of the product of the concern and a business ability and disposition calculated to retain old friends and win new ones.

New Maker in Terre Haute, Ind.

A new comer in the manufacturing field is announced from Terre Haute, Ind. It is the Standard Wheel Co., which has begun to turn out machines for which the bodies are built by the Terre Haute Carriage Co. The first machine turned out is built on the general lines of French cars, and weighs 1,200 pounds. It is expected that the factory will be running in full swing by the middle of February and have a capacity of three cars a week.

Making Automobile Bodies.

The Springfield Metal Body Co., Springfield, Mass., has absorbed the business of the Springfield Cornice Works, of the same place. The concern is prepared to quote prices on all styles of automobile bodies on receipt of specifications.

BAITING EDISON'S BATTERY

A Pastime of Show Week—When it is now due to Appear—Delay "Explained."

The men in charge of the Edison exhibit at the show had a week of much-mixed pleasure. While the name Edison caught the crowd, the tradespeople, remembering keenly how the newspaper exploitation of the unripe battery had filled the public mind with false ideas to the great detriment of the business, fairly baited and bombarded the Edison representatives almost from the beginning until the close of the show. They were called on to answer many direct and embarrassing questions by men whom they did not know but who did know whereof they asked.

When a Motor World man took his turn at the quizzing operation, the Edison attendant, a most gentlemanly and agreeable chap, soon grew red in the face. After the latter had spoken his little piece narrating how the Edison battery had been used on a Baker runabout and accomplished 80-odd miles without recharging, the reporter inquired:

"Have the Baker people themselves ever used the battery?"

"No."

"Has any one else ever used it?"

"No, I can't say that they have."

"Then you yourselves are the only ones that have had it in operation?"

"Yes. You see, we have to do the testing."

"When will it be on the market?"

"The first set will be delivered and applied within two weeks to a delivery wagon of B. Altman & Co., the New York dry goods merchants."

"What has been the cause of the delay in marketing the battery?"

"It takes a long time to make dies and tools, you know."

"But it is now more than a year since the battery was first shown to the public. Surely it does not take that long to make the necessary tools, does it?"

"It takes a long time."

"But I have known whole factories to be built and equipped and producing goods requiring dies and tools in less than a year," ventured the reporter.

"That may be. But it takes a long time, as I have told you."

Nothing more could be drawn out of the young man, whose face by this time was of a lobster hue, and whose discomfiture and desire to escape were only too apparent.

From another source the Motor World learns that there has long been a "kink" of some kind, and that recently one of the highest priced electrical experts in the country had been engaged to, among other things, discover and, if possible, remove the kink from the battery, which exteriorally looks not unlike a gallon can of gasolene.

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EAMES ON MOTOR WAGONS

Delivers an Instructive Lecture, but deals only with Electrics—Fair and Fallacious Tests.

A comparatively small audience was on hand in the parlor of the Automobile Club of America, in New York, last Tuesday night, to listen to Hayden Eames of the Westinghouse Electric and Mfg. Co., of Pittsburg, Pa., speak to the text, "Comment on the Progression of the Commercial Automobile." It was noticeable, though, that the attendance comprised the more practical element of the club, rather than the sport following and social elements. President A. R. Shattuck was absent, and Winthrop E. Scarritt presided. Mr. Eames spoke, without notes, in a conversational style that was interesting in itself.

The thing most emphasized by the lecturer, who reverted to it again and again, was that the electrical and mechanical difficulties of the storage battery for motor vehicle use have been overcome, and that the greatest obstacle which now exists to the general adoption of the electric delivery wagon and truck is the ignorance concerning the practicable stage which they have reached, and a timidity about innovation which leads possible purchasers into asking unreasonable tests to be made. The talk of Mr. Eames was confined to the electric delivery wagon and largely to the experiments of a certain express company in Pittsburg. In substance he said:

"This company, when about to organize, was earnestly advised by a storage battery concern that storage batteries would not do the act. The express company went ahead and built delivery wagons with iron tired wheels. I have here the statement of the foreman of the stables of that company, showing the actual cost for one year of three wagons and four horses and the yearly cost of one electric delivery wagon which does the same amount of work. In this statement the hire of drivers, deterioration of stock, interest on money invested and everything is figured in.

"The cost of the horses and wagons for the year was $3,460.40, and that of the electric wagon $1,998.50—a saving of $1,461.90 made by using the motor wagon. Now, in that calculation I found that the things charged to the electric wagon included a full cycle of repairs, so that the batteries had been completely replenished. No horses were reckoned upon as dying, which they would do in other years and so add to cost of the horse drawn wagons, while the batteries would be as good as new every year, so that this cost for the electric wagon would be the same every year.

"In this relation I want to call your attention to one respect in which we have advanced greatly in the understanding of storage batteries and how to use them. They used to make us believe, four or five years ago, that when the positive plates of a battery were worn out it was time to throw the battery away. Now we know that we can renew all the plates and have a battery as good as new, that the battery will last indefinitely, and that the cost of running is the cost of renewing the plates.

"A case in which I know the figures to be facts is that of an Adams Express wagon, which cost in one year $200 to opereate, and that includes renewals and charging. Of course, every wagon cannot be operated so economically, but this shows what actually has been done.

"The technical and mechanical problems of the storage battery have been so overcome that it is wholly practicable; the difficulty now in the way of their introduction is the misapprehension of those who should be purchasers. All that any truckman or expressman has to do is to substitute a motor wagon for a horse drawn wagon for a while and note the work done and the expense, and that will settle it. Most curious objections are made to the use of the wagons. I am reminded of an army report made upon the use of a new magazine rifle. The new firearm was received and a battle won against a superior force, and the victory was admittedly due to the use of the new repeating rifle. In making his report to Washington the general wrote that the new arm was in every way superior to the old one, that the battle had been won because of its rapid firing possibility, that it did not choke up or exhaust the ammunition as was feared, but that in spite of all this he regretted that he could not recommend the adoption of the gun, because it was impossible to 'support arms' with it. That report actually exists and I have seen it, but it is no more amusing than the reason the manager of the trucks at a department store gave for refusing to recommend the adoption of a motor wagon. He had tried one and admitted that it did the work of more than two horse wagons, and cost less to maintain, but, he said, it had to be charged at noon, and that interfered with his routine.

"Another case of absurd testing is that in which a certain department store indulged. It took a wagon and sent it fifteen miles with one package. The wagon went and returned all right, and the firm next day gave an order for $8,000 worth of such wagons, which it now wants to get rid of. That was an insufficient test. Another, just as wrong in the other direction, was made by a man in Rochester. He ordered a wagon for trial. He did not ask what was its radius of use, but made up his mind that if it would not go fifty miles straightaway he did not want it. He sent the trial wagon out to go fifty miles. It would not do it, and he sent it back. That man's trucks and wagons, it was positively learned, never were sent more than twelve miles on one trip.

"Another illustration of the mental confusion and unfairness that exist with regard to the motor wagon happened in Pittsburg, where one of the iron tired delivery wagons was pitted against the horse drawn wagons. It was three or four weeks before Christmas, when the streets became covered with ice. Now, the iron tires will take hold on wet asphalt when rubber tires will slip; they will take hold through soft snow, but on hard, smooth ice they will slip when the rubber tire would not. The company had a set of iron tires made that were sharp shod. It took three-quarters of an hour to have the sharp shod tires shrunk on, and every one derided the poor motor wagon that required so much trouble. Next door to the wheelwright shop where the sharp shod tire was put on was a farrier's, and there every day during the icy weather there was a string of horses in that shop from 8 o'clock in the morning until midnight. They were being sharp shod, and every day three-quarters of the horses there were animals that had been there two days before. A team would wait for several hours before being attended to, but that was all right. That was something to which every one was accustomed. It had been done for years. It cost more and took more time than the change of tires on the electric wagon, but that was nothing. Meanwhile the motor wagon went on without being tinkered any more, and did the work of three or four of the wagons drawn by sharp shod horses. This illustrates the queer mental attitude of many which is yet to be overcome."

A number of questions were put to Mr. Eames after the talk, one of them being with regard to his opinion of the Edison battery. Mr. Eames said that the merit of the battery was something of which no one could speak properly except those on the inside.. "Now that we have storage batteries with which the only question is of a renewal of the plates," he added, "the Edison battery, or any other, to be desirable must be almost as cheap as first cost, and must give more per pound of its weight. The Edison battery in its present form costs a great deal more than others, and even if it is better—which I very seriously doubt—there is nothing revolutionary about it."

Motor Trucks in Railroad Service.

The Long Island Railroad is said to be having several automobile trucks made to be used in the express service. At present the wagons from downtown New York cross to Long Island City on the James Slip ferry. It is figured that automobile trucks could run uptown on the New York side to the Thirty-fourth street ferry and pick up considerable business on the way.

Haynes-Apperson in Chicago.

An office has been opened at 381-385 Wabash avenue, Chicago, by the Haynes-Apperson Company, with L. W. Smelser in charge. This will be occupied until May 1, when it is expected that a new building at 1,420 Michigan avenue, which is being erected especially for them, will be ready.

Fischer Incorporates With $2,000,000.

Jersey City, N. J.—Fischer Motor Vehicle Co., with $2,000,000 capital. Corporators—William H. Burnett, Charles H. Stewart and William H. Crolius.

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AGAINST CANTOR-ENO LAW

Aldermanic Law Committee Understood to Favor the Original Ordinance with 15 miles Clause.

It has been reported on excellent authority that the law committee of the Board of Aldermen in New York will report favorably upon the original traffic ordinance introduced by Alderman Oatman, with the amendment with regard to speed that was agreed upon as a compromise by the Automobile Club and the Committee of Fifty. This is the amendment fixing a limit of eight miles an hour in the busy parts of the city, with a limit of fifteen miles in the outlying districts.

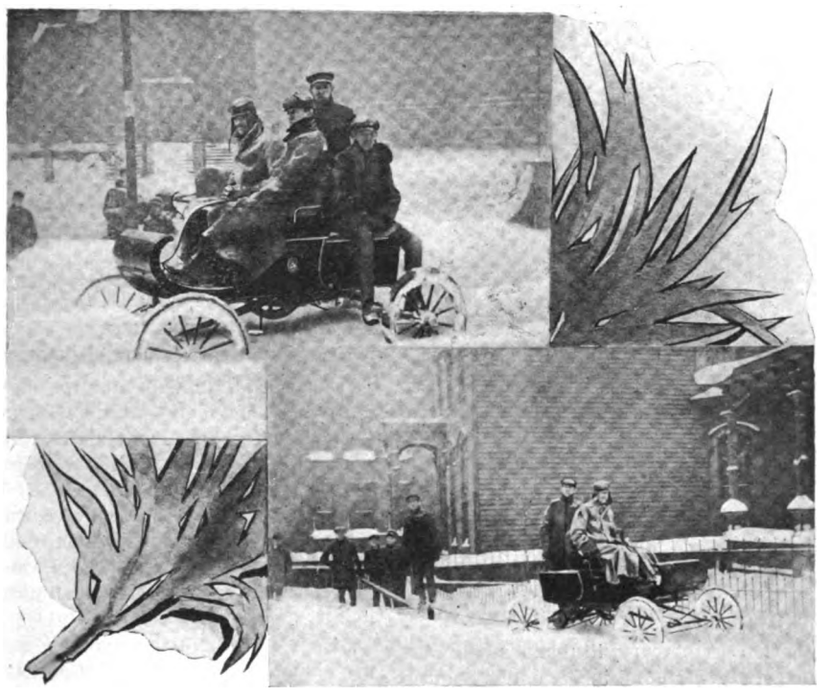
This action by the law committee will render of no avail the "snap" hearing called by Borough President Cantor a week ago last Monday, which was "loaded" with persons who had not been to any former hearings on the subject, but were on hand to favor Mr. Cantor by advocating the ordinance drawn by William P. Eno. The only quibble in relation to the traffic ordinance has been with regard to speed. The Committee of Fifty and the West End Association had a frightful lot of spasms because it was originally proposed to fix the speed limit at ten miles an hour for all parts of the city. The compromise mentioned was effected after several weary hearings, and then along came Mr. Eno, with his bill proposing a uniform limit of ten miles an hour. The dear gentlemen of the Committee of Fifty and the West End Association were not there to again tell in tearful tones how the women and children of the city would be slaughtered if such an ordinance were passed, but there were present several matronly women, some of them gray haired, who calmly approved of the Eno ordinance with the terrible speed of ten miles an hour and all.

The amended section, which will be reported favorably and probably become a law, shows just what the rules will be for all. It is as follows:

Article II, Section 1. Speed of vehicles—The following rates of speed through the streets of the city shall not be exceeded—that is, eight miles an hour by bicycles, tricycles, velocipedes, motor vehicles and streetcars, however propelled, or by passenger and other vehicles drawn by horses or other animals, except that in the Borough of Manhattan, in Broadway north of 181st street, on the Boulevard Lafayette and on Washington avenue, and in the boroughs of Brooklyn, Queens, The Bronx and Richmond, upon streets where the buildings are at least 100 feet apart, a speed of fifteen miles an hour may be maintained.

Article II, Sec. 2. No person riding, driving or in charge of any vehicle on any street, avenue parkway or driveway in the city shall drive the same at a speed greater than reasonable and proper, having regard to the traffic and use of the highway, or so as to endanger the life or limb of any person.

Article II, Sec. 3. Exceptions—Nothing in this article shall apply to the apparatus and wagons of the Fire and Police departments, the fire patrol, ambulances, emergency repair wagons or street railroads and vehicles carrying the United States mail.



THE OLDSMOBILE AS A WINTER VEHICLE.

REMODELED RACING RULES

To be Completely Overhauled, says Stewart—Revisions Drafted but Still Carefully Guarded.

After many half hearted attempts to revise them, the so-called racing rules of the American Automobile Association are to be thrown overboard and a new set compiled. The rules were a legacy from the Automobile Club of America, having been drafted by a committee of the club when automobiling was a young thing that was not supposed to know much. Consequently the rules of the French Jockey Club were used almost bodily, and much trouble has resulted at race meetings since by reason of their shortcomings and inconsistencies.

To a Motor World representative last week Chairman W. J. Stewart of the race committee of the A. A. A. stated that a new set of rules was being prepared.

"The old rules were handed down to us by the A. C. A., you know," he said, "and while we have made several efforts to change them and bring them up to date our efforts have not been successful.

"Now, we have asked the clubs and individual automobilists interested in racing to offer amendments to the rules. Thirty days are given for this purpose, and meanwhile we are at work on a complete new set. We expect to have everything in hand and put in shape before the opening of the racing season."

It is proposed to make the rules concise, clean cut and explicit. There will be a racing vocabulary and a glossary of many terms added.

One proposition is to have a triple classification of cars. The first class will be without limit, and include any four wheel machine that runs on a track by a motor. The second class will be confined to standard stock machines, practicable for any day use. The third will be known as the manufacturers' class, and is intended to encourage makers to prove their transmission and bearings.

The cylinder area, piston stroke, gearing and weight are the factors now being calculated by a scientific student as the basis of a fixed handicap figured down to feet and inches.

Knox's Expansion.

A fivefold increase of factory space was made last week, when the Knox Automobile Co., Springfield, Mass., purchased the Schastey plant in that city. It immediately adjoins their present factory, and the two will be operated in conjunction. The Schastey factory is a two storied brick building 300 by 130 feet, and is completely stocked with wood working machinery. Most of this will be sold, and will be replaced as soon as orders can be filled with more available machinery. Six weeks will probably be needed for restocking the building.

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Calculation of Horsepower.

To calculate the horsepower of a gasolene engine on the basis of its stroke, bore and revolutions per minute, the mean effective pressure during the working stroke, which is exerted on the piston by the explosion of the compressed gases, may be assumed as about 75 pounds per square inch.

The horsepower is, then, the product of this mean pressure by the length of the stroke in feet, by the area of the piston in square inches, and by the number of working strokes or explosions per minute, the resulting product of these being then divided by the number 33,000. The area of the piston is obtained by squaring or multiplying the diameter by itself, and the product thus obtained by .7854.

For a single cylinder engine the working stroke is one out of every four strokes, i. e., one out of every two revolutions of the crank shaft. For a double cylinder engine there is a working stroke every revolution, and for a four cylinder engine two working strokes per revolution.

To Prevent Skidding.

British autoists are interested in a device to prevent side slip. It consists of two flexible wire hoops, one on each side of the wheel and of slightly larger diameter than the rim. The hoops are connected by steel chains passing diagonally from one hoop to the other round the tire. The hoop, or ring, on the inside of the wheel is endless, but the outer hoop is supplied with a right and left hand screw coupling, which affords a ready means for adjusting the non-skidder to the tire. The diameter of the hoops is such that they cannot pass over the periphery of the tire, and it is claimed they cannot come off even when it is deflated.

The non-skidder is not fitted tightly enough to impress the tire visibly, and in running "creeps" slightly, so that the chains never bear on the same point of the cover at any two consecutive revolutions.

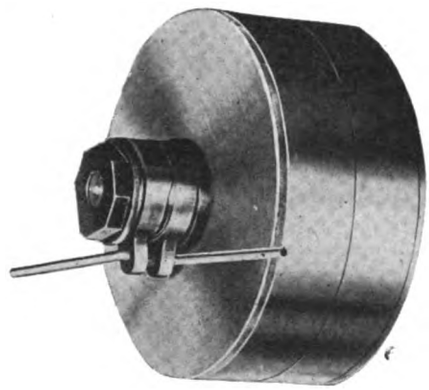
The Subject of Governors.

To the non-mechanical governors are a sealed book until they give the matter a little thought and investigation, and then they are, or at least the principle is, as plain as the proverbial pikestaff. The familiar ball governor found on all steam engines, or even on the top of many elevators, once seen illuminates the subject. An upright shaft, to which the arms containing these balls are hinged, revolves, and the centrifugal force causes the balls to rise and actuate a valve, thus regulating the supply of steam or explosive mixture. As the speed diminishes the governor balls fall, of course, and the valve is opened again. The construction of these governors varies widely, but in principle they are identical.

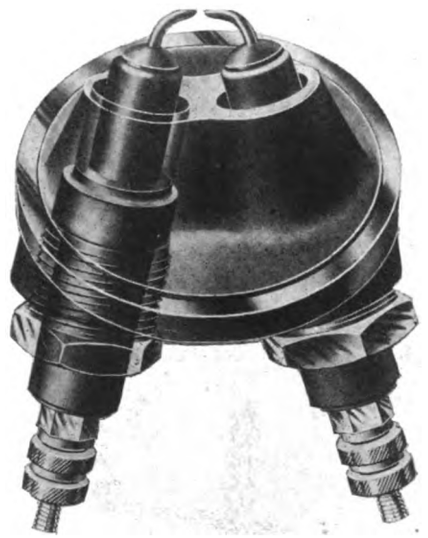
The Banker Bros. Co. have arranged to handle the new Century gasolene car attheir establishments in Pittsburg, Philadelphia and this city.

Some Cadillac Characters.

Brimful of good, clever features the Cadillac is, as its wonderful sales fully attest. In constructing it the Cadillac company have



not asked how cheaply a part can be constructed, but how good. That they have succeeded in keeping quality to the fore a close



examination of the car will demonstrate. An instance of this is found in the extensive use of steel drop forgings, many parts usually



made of castings being in the Cadillac forged and then machined.

As showing the care given to details, the Cadillac spark plug can be adduced. This is furnished either in the double form, an illustrated, or with the regulation single plug. It is held that by making a special spark plug, and careful wiring, the usual sources of trouble are practically eliminated. The amount of insulating material is double that generally used. The inner ends of the insulated sparking points are in close proximity to the inlet valve, so that the incoming charge of cold air keeps them free from any deposit of soot, a very frequent source of trouble.

The compactness of the transmission gears, which are of the well known sun and planet type, giving two speeds forward and a reverse, will be seen by a glance at the illustration.

The accessibility of the shaft bearings and the ease with which they can be removed if necessary is another noteworthy feature. The illustration shows the bearing, with cap, removed and the lower part of the bearing lining partly out. The removal of the cap permits this lower half to rotate in the frame, and as a half revolution brings it on top of the shaft it then may be lifted out, and by a converse operation a new one easily put in its place, restoring the original perfect alignment and proper fit of the shaft bearings in a few minutes, no matter how long the old ones have been used. This is accomplished without disturbing in any way any other part of the motor.

De Dion's Ignition Discovery.

It is a well known fact in physics that gases are heated by compression, but it has been left for the De Dion-Bouton Co. to make use of this natural law in connection with internal combustion engines. The company has invented a method of ignition based on the law in question, which, if all that is claimed for it is fact, will go a long way to overcome one of the autoist's most serious troubles.

Briefly, an auxiliary cylinder and piston are supplied with a charge of gas which they compress to flame heat, when it communicates by means of a tube with the combustion chamber of the main cylinder.

Assuming the possibility of heating to the flame point by the compressive power of an ordinary motor, it is evident that the motor must first be started, and the temporary use of electric ignition would therefore appear to be necessary. But the chief difficulty would probably be in so regulating the firing charge as to insure that it should flame at the right moment.

Packard's School of Employes.

Some little time ago the Packard Motor Car Co. began to give a series of lectures to such of their employes as were interested in the principles of construction and operation of the parts which go to make up a complete automobile. The experiment has been attended with unexpected success. An average of sixty pupils attends the lectures, and the classes display great interest.

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LATE COMERS AT THE SHOW

Tardy Exhibits that Contained Much that was Novel and Interesting.

Among the usual late comers at the show were several notable exhibits, descriptions of which were necessarily omitted in last week's review. Among these were the Wick, an unexpected addition to the number of high priced gasolene cars of American manufacture, and the Clement and Darracq chassis. These, and particularly the former, are magnificent specimens of the most approved French constructional methods, and were examined with keen interest and pronounced to be the finest exhibits of the kind ever shown here.

These and a few other unnoticed exhibits are reviewed below:

The A. Clement Co., Paris, France, having a branch factory at Hartford, Conn., showed one light tonneau car and a complete chassis. The motor of the tonneau is of the two cylinder vertical style, developing 10 horsepower. Both valves are mechanically operated. The ignition is by magneto, and the transmission is of sliding gear type, direct drive on top speed, the clutch having expanding segments. The drive has a longitudinal shaft, having only one universal joint. The frame is of wood, having steel flitch plates. The water cooling is done by a centrifugal pump working direct through the engine circulating the water through a tubular radiator. The motor of the chassis is of a four cylinder type, developing 14 horsepower, the general details of construction being the same as on the finished car exhibit. The water cooling is done through a centrifugal pump circulating the water through a beehive radiator of small square section and a rotary fan, which is actuated by a belt with a grooved pulley on the end of a secondary shaft, which operates mechanically also the induction and exhaust valves.

The Union Motor Truck Co., of Philadelphia, Pa., exhibited a motor express wagon which has a body like the regulation horse drawn express wagon. With the exception of the batteries, which are carried under the seat, the body is entirely free, so that its carrying capacity is as large as any ordinary wagon. Heavy wooden wheels with solid tires are used. The front and rear axles are connected by a framework of 5-inch channel iron rivetted with steel castings, those of the rear axle taking the form of bearings in which the axle revolves. The front casting is dropped to accommodate the height of the front axle, by which it is pivoted by a steel bolt; an auxiliary thrust brace is also used. The three steel castings are provided with the usual block plates to carry the wooden springs and clips. The motor and all the machinery is carried on this framework. The motor is what is known as a two cylinder Otto cycle, having copper water jackets. The stroke is eight inches and the piston five and one-half inches in diameter. An electric ignition of break spark is used. The valves are of the poppet type, and are vertical, and in starting the exhaust valves are held open during part of the compression stroke. No gears, belts or chains are used in transmitting the power, but instead a "silent reversible roller ratchet" is used on the rear axle, and a variable throw crankpin in the flywheel of the engine. A hydraulic pump is used for forcing oil into the piston, driven by a side shaft of the engine on a 3-inch bronze gear, which engages in the 8-inch gear on the friction clutch. The wagon is operated as follows: The engine is instantly started by a hand ratchet on crank shaft. The engine being under way, the silent, reversible roller ratchet being in its normal go ahead position, the operator desires to stop his wagon, possibly heavily loaded. Having hold of the hand lever, he pushes it forward a few inches, when the friction clutch starts the pump, and, like a hydraulic jack, the crankpin begins to move off of centre. As there is no lost motion in the roller ratchet, the vehicle begins to move instantly, although the pin may be only one-quarter of an inch off of centre. In this position the leverage is greatly in favor of the engine, and its stupendous starting torque is developed at the rear driven axle. For each second of time the pump acts the pin advances approximately one-quarter of an inch, and the wagon rapidly accelerates until the desired speed is obtained, all of which may occupy from two to ten seconds, according to the speed desired. Having attained the desired speed, the lever is brought back to normal position, the pump disengages and ceases work and, the crankpin being oil locked, the wagon maintains a constant speed until the driver desires to slow down or increase it further. To back the wagon the reversing lever is thrown over, which causes the cage to recede and the rolls engage on the opposite incline.

Upton Machine Co., Beverley, Mass., who are the makers of the familiar and popular Upton transmission gear, showed for the first time a complete tonneau touring car, having an aluminum body with a channel frame. The motor is of the four cylinder vertical type, of great simplicity, developing 16 horsepower. On the car shown the motor has automatic inlet valves, but on a larger size that they make the mechanically operated valve is used. All of the motor connections are of heavy brass tubing fastened by couplings which are readily disconnected. The exhaust pipes are of very large capacity, connected to a large tube, which is supplementary to the regular muffler, making a very quiet exhaust. The radiating coil is of copper, with copper corrugated web fins; the water is forced through it by a pump actuated by a sprocket and a chain from the main shaft. The oiling is by a positive plunger pump, having a glass cylinder so that the quantity of oil can be seen. The ignition is by jump spark and vibrating coil. Of course, the Upton transmission gear is used, of the 1903 model, which gives a much faster low speed, and having a ratio of two and one-half to one. In this gear the controlling gears are now done away with, the drive being by plain spur gears in the slow speed. The driving is by a bevel shaft to a countershaft on the Panhard style, driving on the rear wheels by two chains. The throttle control is from a small side lever inside of the seat on the left hand side. On the steering pillar are arranged two small hand levers and rods, one to arrange the proper mixture of gas, the other to advance or retard the spark. The two main operating clucch levers are on the left hand side of the car. If the car is under full speed a foot pedal can be thrown on, which operates the brake for disconnecting the clutch through the side lever, back into its normal position and stopping the car. Another foot pedal is for reversing, and a third one is for the slow speed. The slow speed pedal can also be used as an auxiliary brake if desired. The car weighs 2,500 pounds and costs $3,000. The trimmings on the car are all of brass, and are beautifully finished.

H. B. Wick & Co., Youngstown, Ohio, exhibited a big tonneau touring car. This car has an aluminum body, with a frame of I beam steel construction. Half elliptic springs with body irons are used. Both axles are cranked, or dropped between the spring clips so as to lower the frame and produce a low centre of gravity. The motor is of the four cylinder upright type of 28 horsepower, having a 4¼-inch bore by 6-inch stroke. Both valves are mechanically operated by a single cam shaft working on the main shaft with a rocker lever to the supply valves. This rocker arm is held down by a spring. The exhaust valves have a very powerful coil spring, and the inlet has a very light spring, so that when the lower end of the rocker arm drops into the lower part of the cam a supplementary spring pushes up the other one. Artillery wooden wheels with 34x4½ inch detachable tires are used, the axle bearings being full Collinge type. Every bearing on the transmission gear and the transmission and the cross shaft is of an open ring oil pattern, the same as is used on high speed dynamos. The electric ignition is controlled by a small notched circle and toothed wheel on top of the steering wheel. The throttle for the vaporizer is also controlled on the steering pillar by a notched segment. The water cooling is done by a pump operated by a sprocket and chain on the main shaft, which forces the water through a set of radiating coils in front of the chassis, immediately behind and above it, being a brass tank with 105 half-inch square holes, giving 1,500 square inches of radiating surface. A McCanna hydraulic oil pump is used to oil all the bearings and the cylinders. Ignition is by regular make

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and break spark, storage battery being used for starting and a magneto afterward. The transmission is of the slide gear type, three speeds forward and a reverse, all operated from one lever having a safety touch device, so that they cannot be thrown in unless a foot pedal is used, which releases the conical friction clutch on the flywheel. An emergency brake with an inside expanding ring is used on each rear wheel. A double chain drive with a bevel drive shaft is used for the rear wheel traction. The price of the car is $8,000.

American Darracq Automobile Co., who are the United States agents for the D. Darracq & Cie., France, exhibited two tonneau cars, one being a 12 horsepower; price, $3,250; the other, with a limousine top, of 20 horsepoweh; price, $7,500. A superb chassis was also shown, which has already been noticed. On the Darracq cars of 12 horsepower and over some new features are shown. The motor, as is well known, is the Mercedes type, with twin cylinders cast in one piece, having valve motion mechanically operated on both the inlet and exhaust valves, and which are operated by gears from the main shaft. A honeycomb style of radiator and water tank is used, with an exhaust fan to induce an extra draught of air. The oiling system is automatic, the oil being kept warm so as to feed readily in cold weather. The regular brake consists of two friction shoes operating on a drum of the driving shaft, the emergency brake being operated by a hand lever working on the rear hubs. The setting of either brake throws the clutch out. A vibrator is used with batteries. The bodies of these cars are very much larger this year, having tonneaus capable of taking six passengers without crowding. The upholstering is luxurious, and the finish is beautiful to an extreme degree. An entirely new governor, so arranged that it is under perfect control at all times, is used, together with a contact breaker entirely protected from mud and wet.

The Backus Water Motor Co., Newark, N. J., exhibited a new, medium weight touring car, Stanhope body, for two passengers, using semi-elliptical springs with long body irons to carry the body, with a horizontal single cylinder motor located under the seat of 5½-inch bore, 8-inch stroke, developing 12 horsepower. The motor is air cooled by fifteen copper rings one and one-half inchs wide shrunk on the cylinder and eighteen copper bevelled vanes projecting. It is claimed for the use of these copper rings that copper possesses 2.4 times the heat absorbing capacity of iron. The motor is further cooled by a powerful forge blower, which is operated by a flat rubber belt from the flywheel. Another peculiarity of this cooling arrangement is that the motor and the cooling rings are inclosed, and the air is forced through by the flanged blower from the front to the back of the car. The motor is started from the seat by a ratchet, and has mechanically operated valves, operated by cams on a secondary shaft which is part of the transmission. The transmission is of the back spur gear type, such as is used on a lathe, with bevel gears introduced into the pinions for the reverse. The clutches are of the disk style, eight inches in diameter with fibre washers one-eighth inch thick between the surfaces. The frame is a plain rectangular one of machine steel. Price, $1,100.

The First Steam Coupe.

One of the steam carriages that attracted an unusual amount of attention at the show was the new Mobile coupe. It was pronounced by carriage makers who visited the Garden to be the finest coach job there.

The vehicle is substantially built, handsome in appearance and luxurious in appointment. It is designed to carry from six to nine passengers, weighs 3,000 pounds and costs $3,000. It is equipped with a simple two cylinder engine, developing 10 horsepower and having 3⅛x4 inch cylinder dimensions and mounted on an angle iron frame. The boiler measures 17½x14¾ inches, and has a capacity of nine and one-half gallons. The new Mobile burner of the Bunson type, with special steel tip, is used, and gasolene is employed as the fuel.



The wheel base is 7 feet, and 30-inch wheels, either wood or wire, with International tires are fitted. Lever steering and chain drive are employed, and two double acting band brakes. The tanks have capacities of seventy-two and sixteen gallons of gasolene and water, respectively. A water regulator, low water alarm and fuel regulator are supplied.

Outwhizarding Edison.

To invent and construct a rotary steam engine for which $1,000,000 has been offered, and a gasolene engine that can be reversed—this is the work done by a Netherwood (N. J.) man, J. W. Taggert by name.

Particulars are wanting, the imaginative reporter of the local journal omitting these, but asserting that Taggert has outwizarded the Wizard of Menlo Park in producing revolutionizing automobile inventions.

"By a simple though ingenious method the inventor reverses all the general laws governing the building of gas engines, and has cast aside all precedent and has simply reversed the engine and makes the cylinder work the same as the piston usually does," the description says. "In other words, he takes the piston and makes it stationary and works the cylinder back and forth over the piston. Reinforced by an ingenious method of controlling the gas, compression, explosion and exhaust, he secures power at every revolution of the machine."

The steam engine, which can be made of a size to "propel a baby carriage or a steamship," is a "rotary engine that will develop power at only five pounds of steam pressure to the square inch, and at twenty-five pounds of pressure a speed of 7,000 revolutions per minute can be attained and 30 horsepower secured. What is more, the entire machine when running can be rested on a man's shoulder with the greatest ease, and even when running at that great speed will not suffer the least jolting."

The secret of the machine is jealously guarded by the inventor. The fundamental principle is the revolving cylinders and the absence of any sliding pistons or eccentrics. It is worked on the general plan of the turbine, excepting that this engine, when running at a speed of 7,000 revolutions a minute, can instantly be reversed without a single jolt or jar.

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Extent of France's Trade.

Some interesting figures regarding the French automobile trade were given by Baron Rothschild at a dinner given in his honor at the Automobile Club of Great Britain. After pointing out that the imports have never yet reached more than $100,000, he showed the exports to be as follows:

1900.....	7,259,000 francs =	$1,450,000
1901.....	13,414,000 " =	$2,682,800
1902.....	26,551,000 " =	$5,310,200

In giving these figures the Baron pointed out that the sums quoted did not nearly represent the gross amounts received by the French trade, for the reason that the imports and exports are valued by weight by that department of the French Government which does the appraising on these goods. The vehicles, parts, etc., are appraised in bulk at 10 francs, or $2, per kilogramme, the kilogramme being 2.2046 pounds. Thus cars weighing 500 kilogrammes are set down at the value of 5,000 francs ($1,000), 750 kilogrammes at 7,500 francs ($1,500), and so on, which, from the point of view of the actual selling price, is absurd. Cars weighing 1,000 kilogrammes, and racing cars of crack manufacture, have been frequently sold on a basis of $3 a kilogramme.,

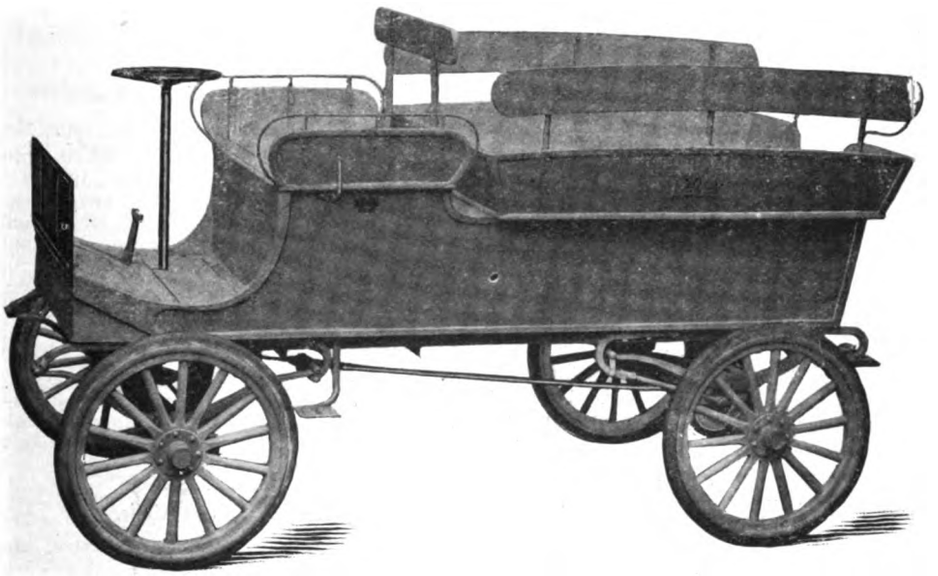
The Baron then went on to state that the total number of firms engaged in the construction of automobiles in France was seventy, having turned out 12,000 cars, and employing no less than 45,000 hands. Taking into account the number of men employed in accessories and the tire trades, the total overtopped 180,000, earning an average wage of $360 per annum. In 1902 tires to the value of $3,000,000 and $600,000 had been sold in France by the Michelin and the Continental firms, respectively.

By the above showing he thought he might claim that in France the construction of automobiles and their appurtenances had in the last few years developed into a national industry. The great strides in perfecting the vehicles were due to the encouragement of racing; for in order to shine in speed competitions the builders had made efforts to improve their vehicles which most assuredly they never would have made for private individuals.

Making Stage Building Easy.

Appreciating the steadily increasing demand for automobile stages, the Brecht Automobile Co., St. Louis, Mo., recently designed and brought out the one shown herewith. It has given great satisfaction to its purchaser, and it will hereafter be carried as a regular stock vehicle.

The stage is made to carry eight or ten passengers, one in front with the operator and the others sitting facing each other. It is shown in the white, ready to be equipped with either steam or gasolene power. The frame is of angle iron, and a positive wheel steering device is fastened in front, with Brecht's patented radius rods on each side of the running gear, which keeps the chain in proper tension at all times. Double acting brake bands, with foot lever attachment and a canopy top, is also furnished, if desired. The vehicle has artillery wood wheels with full metal hubs, and 2½x32 inch solid rubber tire, 1½-inch front roller bearing axle, 1¾-inch rear axle revolving in roller bearings under springs.



Schooling their Agents.

So many dealers and their employes have visited the factory of the National Motor Vehicle Co., Indianapolis, Ind., of late that a miniature school may almost be said to be established there. At one time a week or two ago there were between twenty and twenty-five men familiarizing themselves with National construction.

Willis Gets a Good Man.

F. E. Moskovics has been added to the staff of E. J. Willis, the well known New York jobber. Mr. Moskovics has been captain of the New York Motor Cycle Club and is well versed not only in motorcycles but in all that pertains to automobiles.

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Increase of Electrics in England.

That the electric vehicle has not stood still in the years since it was introduced is well known. Some figures prepared by an English investigator bring the matter out in a particularly clear light. In 1896 the weight of a battery to give 2 brake horsepower for six consecutive hours was twenty-one hundredweight; it is now only seven hundredweight, the efficiency, too, having increased from 70 to 90 per cent, he says. Motors have been reduced in weight, as has also the total weight of the vehicle, while the annual cost of maintenance and the charges for current have been materially reduced.

The Catalog of the Packard.

"With the same care and attention the Packard motor car will give better results than any other automobile made," is the opening statement of the new Packard catalogue, and it is put right up in front where the reader cannot miss it.

The publication is striking looking in its red and gold cover, and is well printed, in colors, in bold, handsome type on heavy calendared paper, with illustrations of complete cars, chassis, etc., and factory scenes. Altogether it is one of the handsomest publications of the year.

Test of Tire Detachability.

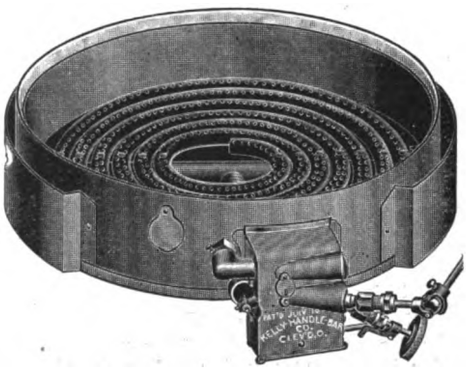
To show the rapidity with which a detachable tire can be taken off and replaced, a test was recently held at Paris, a Continental tire 100 mm. by 125 mm. being used. M. Tampier, official timekeeper to the A. C. of France, held the watch, and M. Albert Sougelin proved the winner. He completely removed the tire from one wheel and replaced and inflated it to a pressure of four atmospheres in the short space of 5 minutes 53 2-5 seconds.

Exides in Rochester.

A new Exide battery depot has been opened at Rochester, N. Y., by the Electric Storage Battery Co., Philadelphia. It is located at the establishment of J. J. Mandery, at No. 158 South avenue. Owners of electric vehicles equipped with Exide batteries in this district can now use this depot for any matters requiring information or attention.

How the Kelly has been Bettered.

Never content to let well enough alone, the Kelly Handle Bar Company, of Cleveland, Ohio, with their usual alertness to take advantage of every possible chance to improve the already satisfactory Kelly burner, have got out a new one piece steel tubular burner, with an entirely new casing. This casing is constructed with no gauze or holes in the bottom, the air being drawn in from the ends. This, it has been found, prevents all



underlapping of the fire—a much to be desired improvement.

The burner, too, being constructed without air tubes, through the continuous stop tube, makes it utterly impossible for the burner to back fire, even if it were to become red hot. The advantages in this respect are obvious. This form of construction has been thoroughly tested, having been in use on a number of cars the past year, and in no case have they ever given the slightest difficulty or other than entire satisfaction. Users of steam cars will find the latest Kelly Handle Bar Company's effort a most welcome aid, increasing the efficiency of steam vehicles.

One of Dixon's Toots.

To the task of reducing friction to a minimum the Joseph Dixon company address themselves, and how they succeed, as far as automobiles are concerned, is fully set forth in "A Toot for Dixon's Graphite," a little booklet just issued by the well known Jersey City concern. The "tooting" is supposed to be done through an automobile horn shown on the front cover. The virtues and uses of Dixon's graphite are set forth attractively and convincingly.

Deals with the General.

General runabouts, in their two passenger and detachable tonneau bodied form, are described in detail in the catalogue just issued by the General Automobile & Mfg. Co., Cleveland, Ohio. These cars, which were formerly termed the Cleveland, are good specimens of the type of medium powered, medium weight, gasolene vehicles at a popular price that are attracting so much attention just now. The catalogue is well printed and contains marginal illustrations of typical road scenes.

Repair of a Leaky Pipe.

A good temporary repair for leaking water pipes or radiators is effected by covering the pipe around the fracture or joint with white lead and binding with tape. The tape should be well smeared with the lead as it is wound around the pipe, the edges of the bandage being well leaded. When dry this makes quite a good repair, and one which has been known to last for a considerable time.

Halsey on Vandeventer Avenue.

The Halsey Automobile Co., St. Louis, Mo., is erecting a $20,000 garage on Olive street near Vandeventer avenue. The building is to be 50 by 120 feet in area, two stories high, of brick and terra cotta, with stone trimmings. It will have a large office and spacious salesroom.

Cadillac will Carry Nationals.

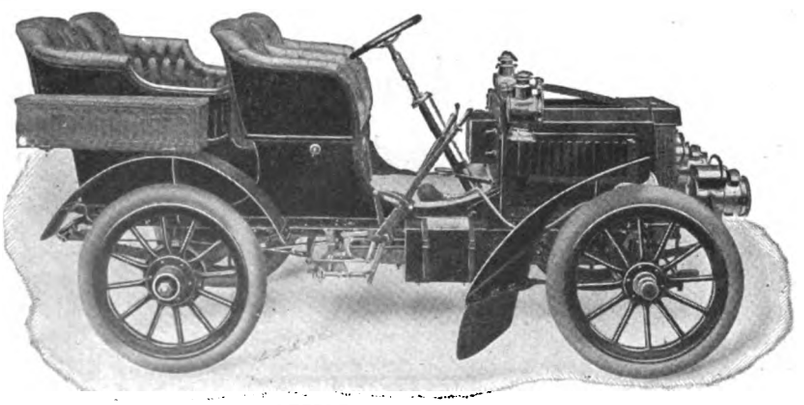
Arrangements have been made whereby the National Motor Vehicle Co.'s goods will be handled in Chicago by the Cadillac Automobile Co. of Illinois, at the latter's new establishment, 1312 Michigan Boulevard, which is nearing completion.

Williams's Spark Coils.

Spark coils in a number of styles, and especially adapted for gasolene car work, are described and illustrated in a catalogue issued by E. Q. Williams, No. 535 South Clinton street, Syracuse, N. Y.

The Week's Exports.

British Possessions in Africa—4 cases motor vehicles, $1,635.
Mexico—1 case motor vehicles, $2,580.
Southampton—1 case motor vehicles, $1,500.



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$750, With dos-a-dos seat $800.

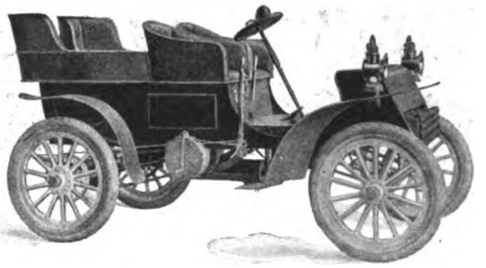
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13 FIRST-CLASS CERTIFICATES and 2 GOLD MEDALS



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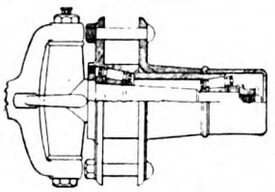
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NEW YORK, Eastern Department, 317 W. 59th St.
PHILADELPHIA, Wm. F Rudolph, 302 N. Broad St.
BOSTON, H. B. Shattuck & Son, 239 Columbus Ave.
CHICAGO, Pardee & Co., 1404 Michigan Boulevard.
LOS ANGELES, Norman W. Church, 439 S. Main St.
SAN FRANCISCO, H. B. Larzalere, 1814 Market St.



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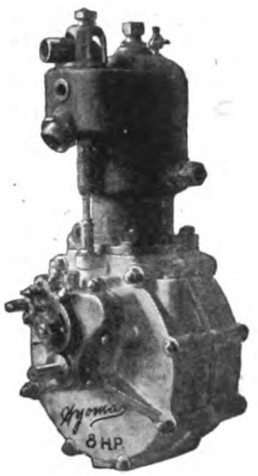
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French Type. Water Cooled.
8 H. P., Single Cylinder.
15 H. P., Double Cylinder.
Equal in workmanship, finish and service to the best foreign makes.

WYOMA Transmission Gear.



3 speeds forward, one reverse.
New system; no bevel gears.
Gears always in mesh.
Ball thrust at each end of shaft.
Enclosed in aluminum case.
Will transmit up to 20 H. P.

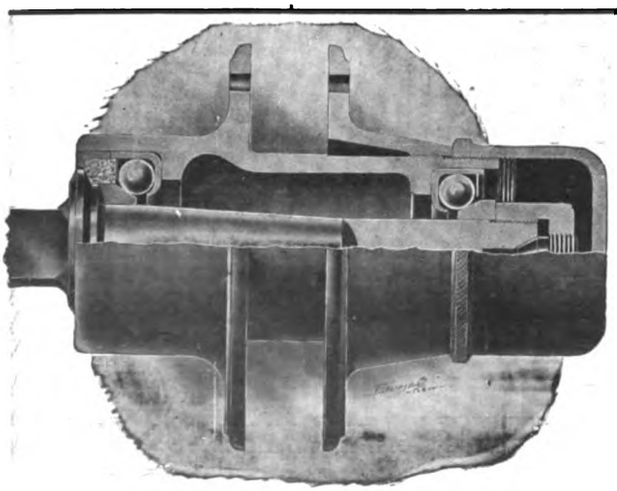
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Manganese bronze bevel gear.
Fitted for either 1¼, 1⅜ or 1½ inch axles 8 pitch.
60 teeth.
For direct drive.
Rod transmission.

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Artillery Wheels.

We are now prepared to furnish these Hubs, Ball-Bearing and Key-Seated, for Automobiles weighing from 500 to 4,000 pounds.

Front Hubs are Ball-Bearing and are assembled on our well-known Steering Axles.

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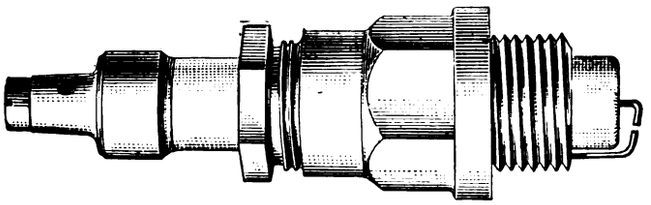
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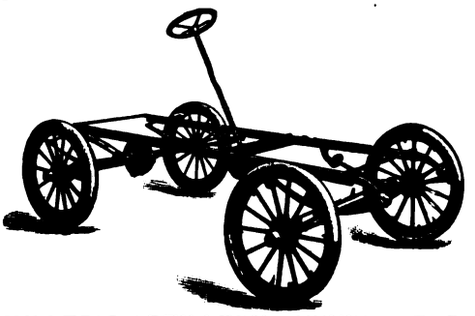
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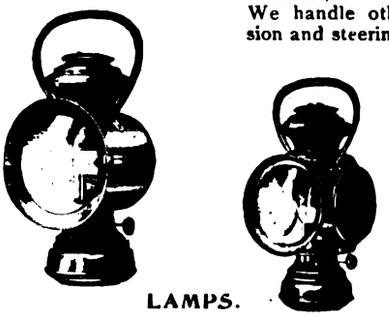
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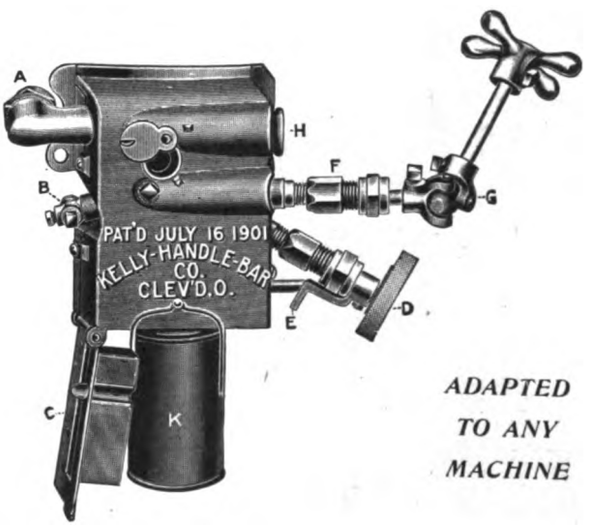
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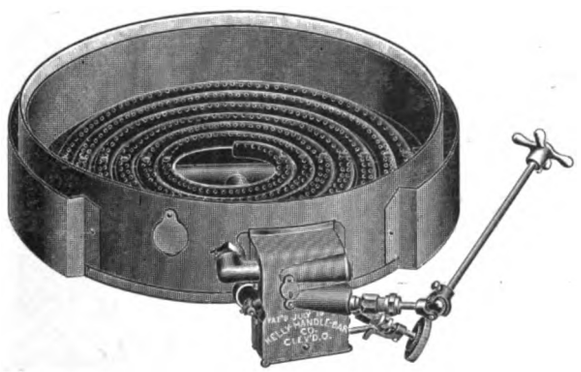
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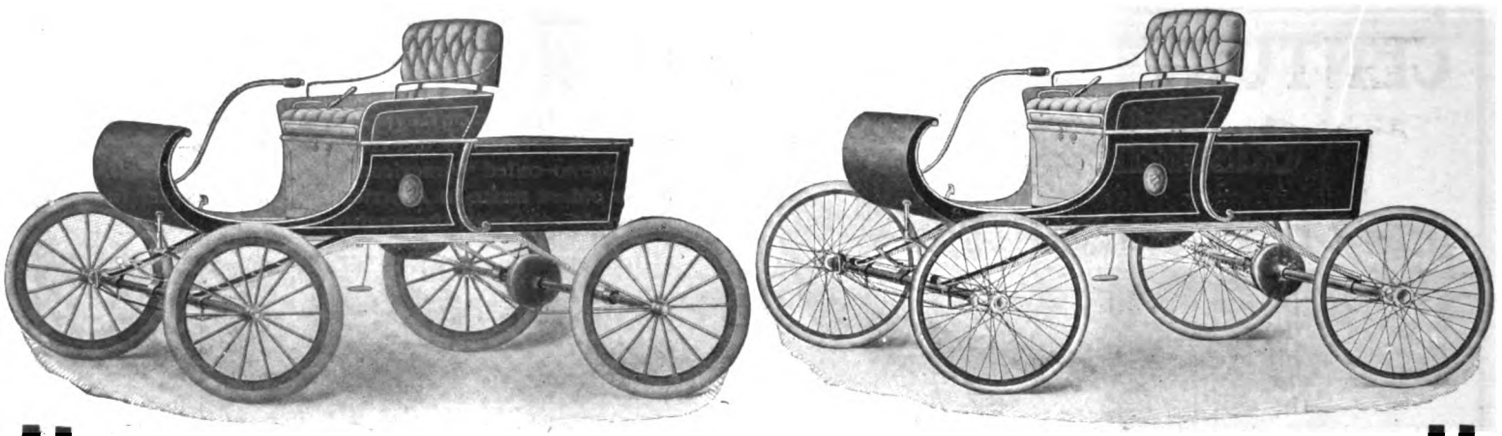


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Made in the largest and best equipped automobile factory in the world. Each detail of its strong and simple construction is the result of 23 years' experience in gasolene motor building. Each working part is made from the best Drop Forgings, with the result that the OLDSMOBILE is "The best thing on wheels."

PRICE, $650.00.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, February 5, 1903. No. 19

BUDLONG MADE PRESIDENT

Prearranged Slate Goes Through at N. A. A. M. Election—Explusion and Censure Dealt With.

Milton J. Budlong, vice-president and treasurer of the Electric Vehicle Co. of Hartford, is the new president of the National Association of Automobile Manufacturers. Mr. Budlong headed a "slate" that was slipped through at the well oiled meeting of the Executive Committee on Wednesday. The full ticket of officers elected is as follows:

M. J. Budlong, Hartford, president; H. Ward Leonard, New York, first vice-president; Windsor T. White, Cleveland, second vice-president; Charles Clifton, Buffalo, third vice president; Percy Owen, New York, treasurer. The appointment of Harry Unwin as secretary, made on January 7 by the old executive committee, was ratified.

Of the fifteen members of the executive committee fourteen were either personally present or represented by proxy. R. E. Olds was the only absentee. Those present were:

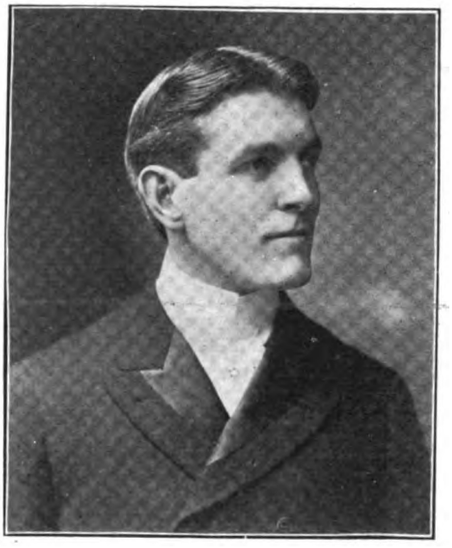
Lucius T. Gibbs, Vehicle Equipment Co.; Windsor T. White, White Sewing Machine Co.; C. E. Duryea, Duryea Power Co.; John Brisben Walker, Mobile Co. of America; I. H. Page, J. Stevens Arms and Tool Co.; M. J. Budlong, Electric Vehicle Co.; Frederic M. Lande, U. S. Long Distance Co.; Charles Clifton, George N. Pierce Co.; J. P. Taylor, proxy for F. S. Fish, Studebaker Bros. Mfg. Co.; J. Wesley Allison, Woods Motor Vehicle Co.; H. Ward Leonard, Ward Leonard Electric Co.; S. T. Davis, Jr., Locomobile Co. of America; Percy Owen, proxy for Alex. Winton, Winton Motor Carriage Co.; George B. Adams, proxy for J. W. Packard, Packard Motor Car Co.

S. T. Davis, Jr., presided, and when the time came for the election of officers he suggested pleasantly that it was customery to appoint a nominating committee, and thereupon appointed H. Ward Leonard, Percy Owen and J. Wesley Allison as a nominating body. After retiring for a very brief interval they returned with the ticket prepared.

"The committee appears to have taken good care of itself on the ticket," smilingly remarked the presiding officer.

Then a motion was quickly made that the secretary cast one ballot for the ticket, and this was done. Gentlemen present who during the show had led Windsor T. White to allow his name to be used as a candidate concealed whatever embarrassment they felt and quietly acquiesced in the simple little programme.

Concerning the location of the officers, that matter was left to the discretion of the president and secretary. After the meeting it was officially stated by the secretary that the offices would remain where they now



M. J. Budlong, President, N. A. A. M.

are, at 7 East Forty-second street, New York.

The question was brought up concerning the expulsion of Automobile Topics for having attacked Mr. Shattuck and others and also for having, during the New York show, declared Automobile Topics Daily to be the official organ of the N. A. A. M. The matter was referred to a committee. The manager of the Chicago show was also censured for making that publication his official organ. No one laughed except the secretary.

It was decided to have the Association incorporated, and a special meeting was called for March 18 in New York, to revise the constitution and bylaws.

The recommendation from the main body that a contest should be held over the Fort George Hill was approved and referred to the Technical Committee for the arrangement of details.

SPAULDING WILL QUIT

Action Begun to Dissolve Buffalo Concern—Protection of Creditors Given as the Cause.

Proceedings were begun in the Special Term of the Supreme Court at Buffalo on Thursday last asking for a voluntary dissolution of the business of the Spaulding Automobile & Motor Co., of that city. On the application of a majority of the stockholders Justice Childs appointed Nelson P. Baker temporary receiver, fixing his bond at $12,000.

Mr. Baker is the secretary of the company.

The action will excite surprise chiefly because of its suddenness. It was known by concerns having dealings with the Spaulding company that there was something wrong. Payments were belated, and very little satisfaction was forthcoming to those desiring settlements.

The Spalding company was of comparatively recent formation, and did not cut much figure in the trade. It made a car of the gasolene runabout type.

According to Mr. Spaulding himself the proceedings were instituted as a matter of protection for the general creditors, all of whose claims, he stated, will be eventually settled in full.

It is understood that the liabilities of the concern are more than $20,000 and the assets less than $5,000.

Joyce Retires.

James J. Joyce, jr., general manager of the International A. & V. Tire Co., Milltown, N. J., has presented his resignation, to take effect on March 1. Mr. Joyce has been connected with the company for a number of years. He has several propositions under consideration, but will not decide upon his future connection for some weeks.

At the expiration of the lease of the present quarters on Forty-second street, this city, the general offices of the Locomobile Co. of America will be removed to the factory in Bridgeport. President Davis made the announcement during the N. A. A. M. meeting yesterday.

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STARTS ON SUNDAY

And Why That Day was Chosen for Paris-Madrid Race—Cup Race in Belgium?—Paris's Newest and Most Remarkable Road.

French Bureau Motor World.
2 Rue d'Abbeville.

Paris, Jan. 21.—The start of the Paris-Madrid motor car race has been definitely fixed for Sunday, May 24. Two principal considerations have weighed with the committee of the A. C. F. in fixing the start on a Sunday. In the first place there will be much less traffic on the roads and hardly any farmers' carts, and as the route from Paris to Bordeaux, which will form the first day's run, lies over the most populated portion of the whole distance, it is most important to have the roads as free as possible both on account of the danger and also to allow the obtaining of the highest speeds. In the second place the public take a very great interest in road racing and it is the desire of the A. C. F. to make this sport as popular as possible and Sunday is the only day on which the working population will be able to turn out and witness the great international events.

The entries for the race opened on January 15, and all entries received between that date and February 15, will have their position at the start of the race decided by ballot. Entries received after February 15 will be set down to start in the order in which they are sent in. There will be four classes, namely: motor cycles (up to 50 kilos) entrance fee 50 francs; voiturettes (250 to 400 kilos), entrance fee 200 francs; light cars (400 to 650 kilos), entrance fee 300 francs, and heavy cars (650 to 1,000 kilos), entrance fee 400 francs. After April 16 the entrance fees will be doubled and the lists will be irrevocably closed on the evening of May 15 at 6 o'clock.

In addition to the four classifications specified about there will be a competition in each class for regularity. Each manufacturer will have the right to name a set of four of his cars in each or any class, which he desires for the regularity trial, but he must name the four not later than the evening of May 20 at six o'clock and after that date no change whatever can be made in the set he has named. The set of cars in each class which does the best average time will be the winner of the regularity trial of its class.

The Paris municipal council has decided to build what will be most important and certainly the most unique road in the world. It will start from the Arc de Triomphe and forming a straight line with the Champs Elysees, run right into the middle of the ancient forest of St. Germain to the Croix de Noailles, a total distance of a little more than eleven miles. The road which will be about forty yards wide, will contain twenty footpaths for pedestrians, two paths for cycles, a road for horse-drawn vehicles, a road for automobiles and an electric railway in the middle. The cost of the construction of the road will be upward of 1,160,000 francs, and as it will be seen by the above description, each form of modern transport will be able to circulate on it quite independent of the other and no doubt at a speed suitable to its capabilities.

Among the latest victims to the French police and with three days prison hanging over his head, is the Baron Henri de Rothschild, and strangely enough while he was being condemned by the magistrates in Paris, he was lecturing to the members of the English Automobile Club on the prudence with which they should temper their speed. It seems, however, that the Baron committed the terrible crime of refusing to show his papers to the police when called on to do so and although he is appealing against the judgment it will hardly be possible for him to escape from the clutches of the law in this case.

The statistics of the City of Paris, for the first three months in 1902, has just been published and in the chapter entitled accidents, there appears the following interesting figures:

Accidents caused by horse-drawn vehicles, 597; deaths, 23.

Accidents caused by falls from a height, 30; deaths, 18.

Accidents on the river, 50; deaths, 9.

Accidents caused by bicycles, 30; deaths, 0.

Accidents caused by automobiles, 92; deaths, 1.

Divers accidents, 369; deaths, 40.

By these figures it is clearly shown that next to bicycles automobiles have the least percentage of fatal accidents, namely, 1.08 per cent, while horse-drawn vehicles are more than three times more dangerous for their percentage of fatalities is 3.8, and notwithstanding these telling figures, the self-propelled traffic is the subject of constant and vexatious prosecution and persecution by the police and autoists are obliged to carry a distinguishing number, while the horse-drawn traffic, consecrated by custom, is allowed to run its own free will without interference.

The choice of a route for the Gordon Bennet Cup is occupying the attention of at least three European clubs. The A. C. F., of course, wants the race to be run in France and in connection with the great race of the year from Paris to Madrid, and in favor of this plan there is much to be said, for the roads in France and especially the Paris-Bordeaux road is perhaps the most suitable in the world for high speeds. It is wide, well laid and has few sharp bends, and in addition to this there are comparatively few large towns on the route, and consequently few neutralizations. The cars which are being prepared for this international struggle, will certainly be faster cars than anything that has ever yet been on the roads, so that a good course is more than ever necessary. On the other hand the English Club would prefer to meet its French competitors on neutral grounds, if it is found impossible to have the race run on British soil. In view of this the Belgium Automobile Club has already several times hinted that it would be very glad to make arrangements for the race to be held in Belgium, which country has not challenged the cup this year, and is not therefore a competitor. The English club has now made a formal request to the Belgium club to organize the cup race over the Circuit des Ardemes, which is a route particularly suitable to the struggle, though it is not at all certain yet if the French club will consent to this arrangement.

Six-Hundred Cars at London Show.

Although opened without the slightest eclat, with society conspicuous by its absence, and with the spectacular accompaniments that marked the Paris show entirely lacking, the British automobile exhibition, which began at the Crystal Palace, London, on Friday last, is a distinct success. Except that of the Paris function referred to, no equal showing of cars has ever been made. There are more than 200 exhibitors, showing more than 600 complete cars. Outside the Palace were 120 more cars, used for demonstrating purposes. Business, with a big B, is the keynote of the show, as while the adjuncts of fashionable functions may be there later, they were not in evidence at the opening.

No startling novelties, no radical departures, were to be seen. The growth of the four-cylinder car, and the parallel popularity of the small, medium priced cars, were the most noticeable features.

American makers are pretty well represented. The White, the Baker, the Winton, the Locomobile and the Duryea all had a good showing, and their light weight and moderate prices attracted much attention. The Baker "Torpedo" was also on exhibition.

French cars were also a noticeable feature, most of the leading makers being represented.

The show was opened by Sir Albert K. Rollit, M. P., who reiterated the complaints against the British backwardness compared with American enterprise in the use of labor saving machinery.

Referring to the show in Madison Square Garden, New York, he said he hoped the British manufacturers did not intend to retire from such international contests. Sir Albert expressed the opinion that they should be strongly represented at the St. Louis Exposition and that the British Parliament should assist them in so doing, as the German Reichstag did in the case of German manufacturers. The speaker also said he thought that Parliamentary interference was largely responsible for Great Britain's backwardness in automobilism.

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TWO SHOWS IN BOSTON

Blackballing Starts a Lively Row and a Rival Organization With Pretentious Plans.

Boston autoists are at loggerheads, and no Capulet and Montagu feud was more bitter than this one promises to be. The tradesmen are in one camp, the clubmen in another. Two associations are now in existence, two shows seem to be assured. Each faction ignores the other, and says it will go its own way regardless of its rival.

The trouble all arose, it is said, over the blackballing of two prominent members of the Dealers' Association who had applied for admission to the Massachusetts Automobile Club. Instantly there were threats of retaliation, and the two organizations forthwith swung far apart and have since been moving along parallel lines.

The clubmen have formed the New England Automobile Association, which "will have for its purpose the furtherance of matters pertaining to the automobile." Although having no official connection with the Massachusetts Automobile Club, many of the promoters are members of it. The gentlemen whose names are most closely identified with the new association are Colonel James T. Soutter, E. C. Lee, F. H. Tudor, Jr., Newton Crane, F. L. D. Rust and E. H. Clements. The association proposes to hold an automobile show in Mechanics' building the week commencing February 24, and will establish a circuit of race meets, with races in the leading cities of New England.

In the matter of legislative work, the association proposes to be prominent. It will be represented at all the hearings at the State House in which automobile interests are concerned.

The Boston Automobile Dealers have already completed arrangements for their show at Symphony Hall, during the week of March 16. Speaking of the rival show, Chairman Eldredge of the show committee of the Dealers' Association is quoted as saying: "The formation of the New England Automobile Association and the announcement that it will hold a show in Mechanics' Hall during the month of February will not disturb the plans of the Boston Automobile Dealers' Association in the least. We shall continue our arrangements and will hold our show in Symphony Hall on the date scheduled, the week commencing March 16. Inasmuch as all the automobile dealers in this section have secured space for our show, I cannot see wherein the proposed opposition show will injure us in the least. Not only have they secured the space mentioned, but, in the majority of instances, have paid for the same, and there is really no reason why our show should not be the success we have anticipated since we first determined and announced our intention of holding it."

On the other hand, President Soutter of the Massachusetts Club presented the new organization's side in this wise:

"The show in Mechanics' Building is intended to educate Boston people to take livelier interest in the automobile. Space has already been engaged by certain exhibitors. Some club members will exhibit machines, and manufacturers will be invited to send exhibits. But there will be a programme of interesting events for show week, such as brake tests, obstacle races for autos, and automobile 'stunts,' to make the show something like the horse show in its interest for the public. We have no sanction from the National Association of Automobile Manufacturers, but none will be needed for this will be only an association affair. A considerable amount of money to carry out the plans has already been pledged in subscriptions."

Entries for Trial Cup Races Close.

The entries for the team were formally closed on Saturday with L. P. Mooers, H. S. Harkness, Percy Owen and C. W. Matheson the candidates for the two vacant places on the team.

With regard to a trial contest for the candidates there is no doubt but what a test will be held. There is reason to believe also that the character of it has been planned by the committee, although it steadfastly refuses to reveal what its plans are. Said one member of the committee:

"When those cars arrive here on April 11 they will be tested, and well tested. You may be sure of that, but because the committee doesn't choose to announce its plans it is no reason to infer that it has none and does not know just exactly what the test will be. O, no!"

Not Likely to Build Motor Cars.

There appears to be little truth in the widely published report last week that the General Electric Co. would enter the automobile field with a gasolene car that it has been experimenting with for some time. That the company did build one such car is a fact. It was seen in Boston last October during the reliability contest. It is also true that the General Electric Co. may make automobile parts. But as to complete vehicles, the Motor World representative was told by a gentleman having unusual means of ascertaining the facts that there was absolutely nothing in it.

To Sell Oldsmobiles in Detroit.

One more local Olds company has been formed, the Oldsmobile Co., of Detroit, with the well known W. C. Rands & Co. as managers. The Olds product will, of course, be handled. For the present the business will be conducted at No. 254 Woodward avenue, but it is proposed to erect on one of the principal business streets a commodious garage, where cars will be displayed, sold, stored, repaired, etc.

IN BELGIUM OR IRELAND

Course for Cup Race in one Country or Other but British Cable Adds to Doubt.

Latest indications point to a probability of the race for the international challenge cup being held on Irish soil, with the neutral grounds of the Ardennes Circuit, in Belgium, offered as an alternative, and the date some time early in July.

On Tuesday the Race Committee of the Automobile Club of America made it known that it was in receipt of a letter from the Automobile Club of Great Britain and Ireland, in which it was explained about the course that had been found in Ireland which, it is believed, complies with all the required conditions of the cup race rules.

According to the letter the proposed course has been somewhat changed from that first reported by the special committee sent to Ireland. As finally decided upon its circuit is 126 miles. The route embraces in order Naas, Kildare, Stradbally, Ballyroan, Athy, Kilcullen, Carlow, Athy, Kilcullen and Naas.

The letter from the British club to the A. C. A. was signed by David Solomons, chairman of the Committee on Foreign Relations, and it states that the Irish course as a whole has a finer roadbed than the course over which the race was run last year. Mr. Solomons writes that the A. C. G. B. I is naturally anxious to have the race run on British territory if possible, and that it hopes to obtain official permission to use the course selected. Failing in this it will have to choose between turning over the contest to the French club or to the Belgium club, which has written to the English organization offering it the use of the course over which the Ardennes Circuit was run last July. Mr. Solomons says that the French club would naturally make the cup race a part of the Paris-Madrid race on May 24, and that this date is deemed too early.

Replying to the letter the A. C. A. declared itself heartily in sympathy with the desire of the English club to have the race on the Irish course, and hoped that this could be done. It agreed with the sentiment that May 24 would be too early and that July would be a better time for the race.

After the exchange of these epistles and before the British organization had time to receive the reply of the A. C. A. there was received on Tuesday a cablegram from London asking:

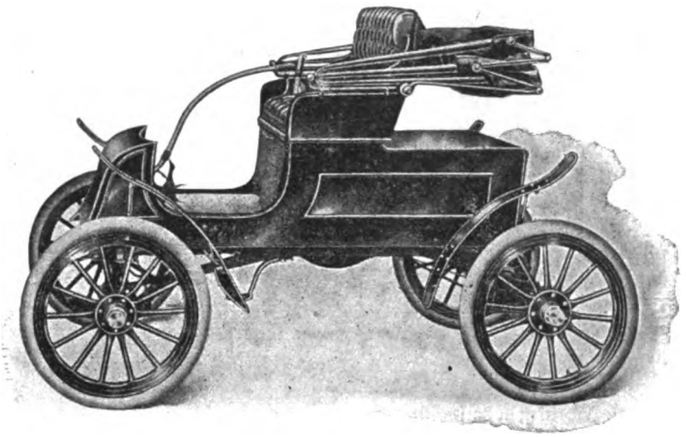
"Is 9th July satisfactory, Gordon Bennett race?"

To this answer was sent saying "July 9 is satisfactory."

The inferences taken from this query were that either the English club has obtained permission to run the race or that it has been refused permission and is negotiating for the use of the Belgium course. Of the two inferences the former one was the more favored by the members of the A. C. A. Race Committee, which met specially on Tuesday to consider the communications mentioned.

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OHIO MOTOR CAR CO, 317 Huron St., Cleveland, Ohio. NATIONAL AUTOMOBILE & MANUFACTURERS CO., 26 Fremont St., San Francisco, Cal.
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NEW YORK, FEBRUARY 5, 1903.

"We congratulate you on your report of the New York show. Everything you claim for it is true."—F. G. Mott, Jr., Weston-Mott Co., Utica, N. Y.

Hands Off This Law!

Of all the laws affecting automobiles that are in existence there is not one so brief, so simple, so sane, so fair, so thoroughly understandable as that on the statute books of the State of Connecticut.

It is a model of clarity and comprehensiveness and of equal and exact justice that safeguards all interests and yet does not assume the automobilist to be more of a malefactor or criminal than the man who drives a horse.

To tamper with such a law would be little short of a crime; certainly, it would be profoundly deplorable. We sincerely hope that the efforts to that end will meet with the defeat that they deserve.

Of participation in the anti-automobile hue and cry that has been created throughout the country, Connecticut has been happily free, or almost free. It is the best evidence that the law as it exists is sufficient.

What it means and one of the most eloquent testimonials ever rendered to the State grew out of this same law. It was given by the Bridgeport doctor who, arrested in New York, where miserable class legislation aimed at automobilists is in force, exclaimed feelingly:

"Thank God, I live in Connecticut."

When a law can inspire such pride of citizenship, the legislator who would alter it merits being cast into the darkness of obscurity. As it stands it is a tribute to the progressive common sense and clearheadedness of the State. It would not be pleasant to be called on to revise such a high opinion.

The Sizes of Tires.

Tire sizes are yet very far from being standardized. Whatever change has been made for 1903 is undoubtedly in the direction of larger tires, but there are not wanting those who say that there is still plenty of room for improvement in this direction.

Primarily tire sizes and the weight they have to carry have a close and intimate relation. There are other considerations, of course—the weight and thickness of the enveloping walls, the weight and weave of the fabric, the shape of the tire and the rim, the character of the roads to be traversed. But they are of much less importance than the weight of the car to which the tires are to be be fitted.

For several years the belief has been growing that large tires were the only proper ones to use.

To-day the tire sizes range from 28 to 36 inches, with sectional dimensions of from 2½ to 4 inches, just as they did a year ago. But no makers have gone backward, i. e., reduced the dimensions, while many have increased them, sometimes the cross diameter and nearly always the sectional dimensions.

Both changes are, within reasonable limits, steps in the right direction. The belief, once entertained in some quarters, that pneumatic tires would give way to something less expensive has been shown to be a fallacy. Vibration intercepting devices of the kind are absolutely necessary, both for vehicle and passengers, and instead of decreasing the size of the air cushion it is likely to be increased.

For anything except the lightest runabouts tires smaller than 3 inches are unsuitable, failing to intercept the vibration to anything like the extent that is desirable. Cars of 1,500 pounds or more are better off with tires of more than 3-inch diameter, and for the heavy touring type 4 inches will be found to more than compensate for their cost by reason of the great luxuriousness that follows in their train.

The Course for the Cup Race.

With the coming of February, and the closing of the lists to aspirants for places on our team, the Bennett Cup race seems to be appreciably nearer. The cryptic cablegram from the British club, which seems to point to a July race in Ireland, also appears to add definiteness to the approaching struggle.

It should be borne in mind that the selection of the course lies entirely with the Automobile Club of Great Britain, as the holder of the trophy. Out of courtesy, the French and other clubs entering teams are asked to approve the course selected; but their approval is not necessary. Provided a "stretch" of "not less than 99¾ miles" is selected, it must be accepted, whether the other clubs like it or not. On the other hand, the British club can turn the race over to the French club, to be run in France, if it so desires or is unable to run it in Great Britain. To run it outside of Great Britain or France—in Belgium, for example—consent of the contesting clubs must be obtained.

It will be seen, therefore, that the British club is master of the situation up to a certain point. If it cannot find a course in its own country, or the Government will not accord permission, then it must go to the French club and negotiate further.

Under the rules, the race must be run between May 15 and August 15. The date may be named as early as February 1, and must be named thirty days in advance of the race. There is, therefore, still plenty of time for this.

The Bevel Gear Drive.

One of the most interesting developments of the day is the increasing popularity of the shaft and bevel gear drive to a live rear axle. This popularity is undeniable. No maker abandons the use of this method, while an increasing number adopt it every year, the number for 1903 being much larger than usual.

The movement is not confined to any type of car. The steam and the gasolene car both employ this method of transmitting the

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power. At the recent show at Madison Square Garden its appearance on heavy gasolene cars was one of the notable features. The time honored individual chain drive to the rear wheels was overshadowed, the number of bevel gear driven cars even outnumbering it. Never before had they done more than make a respectable showing. Consequently their sudden leap into prominence was the more attention-compelling.

Opinions will, of course, differ as to the respective merits and demerits of the two systems. As a matter of fact, the long standing nature of the dispute indicates how impossible of settlement it is. Chain drives and bevel gear drives always have had and probably always will have their advocates as long as machinery that calls for one or the other is used.

The defects of the chain are mainly on the surface, and, therefore, notorious. It contains a multitude of parts, all subject to wear and consequent deterioration; it is almost necessarily dirty, owing to the difficulty of protecting it from the mud and dust; and it is particularly liable to breakages, sprocket jumping, etc. On the other hand, it is, when properly made and in good order, a remarkably efficient, reliable and accommodating power transmission medium.

The bevel gear, on the contrary, has "talking points" that make it a winner at first sight. It is clean, sightly, thoroughly mechanical. It is in keeping with the remainder of the transmission mechanism, which is largely made up of shafts and gears. But there is offered in objection to it the old theory of power lost in "turning a corner," of binding and breaking teeth, even of twisting shafts. In simple justice to it, it may be said that modern methods of construction, with their wonderful systems of gear cutting, fully meet these objections.

A year ago chains to the wheels were regarded as the only method of transmission to use with big gasolene cars. As in so many other things, French fashions were accepted without much demur, and the fact that nearly all the big French firms, together with many German and English ones, used chains was sufficient to cause them to be looked upon as the proper thing.

Now, however, a number of additions have been made to the ranks of foreign makers using bevel gear drives. No break has yet taken place among the oldest and most prominent concerns, but of the newer or more progressive ones, the bevel gear drive has undoubtedly gained ground.

The same tendency is noticed among our own makers. Coinciding, as it does, with the foreign movements, it shows that there is no indication of a desire to copy slavishly; instead, designers strike out on lines of their own and do their own investigating.

Economy of the Direct Drive.

One of the features of the show that attracted an immense amount of attention was the direct drive on the high speed. Cars or chassis with open gear boxes were fairly numerous, and crowds collected around them to examine this interesting variation of the regulation slide gear speed change method. The most popular type showed the drive direct through the main shaft, with its bevel gear pinion on the rear end. The forward gear wheel on this shaft was in mesh with one on the countershaft, but the power was not transferred to the latter, it merely running idle. Of course, when it becomes necessary to change to a lower speed the two gear wheels mentioned are thrown out of mesh and a main shaft gear slid along to engage the desired one on the countershaft, the power being, of course, transmitted to the main shaft again. The importance of using the high speed wherever possible, and consequently of having an excess of power in the engine, is readily apparent. The direct drive is wonderfully economical, just as the indirect one on the lower speeds is wasteful by comparison.

Officials who Offend.

That "the king can do no wrong" is a mooted point in these modern days, and constitutional kings are careful not to put the matter to a test too often.

What the autoist-persecuting English "Bobby" would do to his king if he caught the latter "scorching" at faster than twelve miles an hour is terrible to contemplate, so fierce would be the conflict 'twixt respect for his sovereign and disrespect for the latter's automobile. But the odds are that he would be looking the other way if he got a "tip" in time. It is not surprising, therefore, that King Edward should have covered eighteen miles in forty-five minutes the other day, and yet gone scot free.

Our Mayor Low, and yet more frequently Commissioner Greene, enjoy a similar immunity when they go automobiling. The latter can inspect widely separated station houses at the rate of a dozen or so an hour, and yet no alert officer hauls him in for exceeding the archaic eight miles an hour which is still the maximum speed in this city.

The trouble is more with the law than with such lawbreakers as those mentioned. It was General Grant who said that the way to do with a bad law was to enforce it, and if this were done with the antiquated traffic rules—horse drawn as well as mechanically propelled ones held strictly to them—it would not be long before the demand for a reform would be heeded.

The Bonus for the Chauffeur.

It is the Chinese, so the story runs, who pay their physicians only when they are well, holding that as it is their task to ward off illness they are derelict when it comes in spite of them. There are some owners of automobiles who think this plan, or some modification of it, would be a good one to try with their chauffeurs or mecaniciens. The latter don't seem to realize that they are successful only when they ward off the car's ailments. It is worse, of course, when their carelessness is to blame for mishaps or troubles than when some functional derangement of the car takes place. But the latter can frequently be guarded against and avoided if the caretaker puts his mind to it. Hence a system of rewards or bonuses when nothing goes wrong, and its cessation at other times, might be tried with some hope of bringing about an improvement. It could do no harm, at least.

Two more legislatures have turned their attention to automobiles—New Hampshire and Maine. The latter has had presented to it a very sensible measure. Such speeds as eight and twenty miles cannot reasonably be objected to, and the stated desire, i. e., to cover the subject by a State statute rather than by a multitude of local ordinances, with all the injustices and inequalities that mark the latter, is an excellent one. A little more legislation of this kind would be welcomed.

How terribly discouraging must have been the experience of that autoist who last week advertised that he would exchange his automobile—name not given—for a lot in Greenwood Cemetery! How many breakdowns, collisions, accidents and even runaways must the unfortunate man have encountered to cause him to prefer the grave to the exhilerating auto!

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Commentary

Windsor White as president of the N. A. A. M.! That's something like it. And the association, if it honors White, will honor itself. If it comes about—please note the "if"—I wonder if that journalistic gentleman with the delightful Weberfieldian dialect whose specialty is wine buying will draw as many corks as usual. When during the show Mr. White was mentioned he was heard to exclaim:

"Vhite! Ah! de steam boom ees explosioned. He vill not do."

The salaried secretary of the association, too—the prospect must fill him with a conflict of emotions. Whoever he is and whatever else he does, the new president will do well to whisper a few words in Mr. Secretary's ear—if the present Mr. Secretary is retained. He's a very affable chap, but a man representing an organization of the sort can't afford to play favorites with New York newspaper men as he has done. He has one in particular who mentions him oftenest in print, and he truckles to him as he should not be permitted to truckle. He not only sends him advance copies of reports and runs to his office with "tips," but carries the thing to excess. I know positively that on one occasion a reporter called up Mr. Secretary and sought information, and no sooner was this telephonic conversation over than he hurriedly rung up his friend on the other paper to let him know that others were "wise" and had a certain story in prospect.

"Didn't I tell you not to give out that information to-night?" demanded the friend.

The secretary made some sort of explanation.

"Well, I don't care. I told you not to give it out. I don't want to work to-night."

Judge for yourself.

* * *

I am not going to criticise or praise the show, either in part or as a whole. It certainly was the biggest and the most profitable of any ever held in this country, and I am content to let it go at that, leaving my more competent brethren of the technical press to supply you with facts as to why all this was so. One thing I did notice, however, which I think is worthy of comment. There was very little attempt to make the affair a "social function" through the donning of evening dress by the employes of the exhibitors. Of course, there were a few misguided ones who thought that the wearing of a crush hat with a tailess silk-faced coat and a decollete waistcoat so disguised them as members of New-York's most aristocratic circles. Perhaps the editors of Flatbush and Hackensack society papers would never have known that the disguised ones were not the real thing had it not been for their being confined within the small railed in space wherein the exhibit of their employer was.

This question of costume had in most every instance, however, been wisely settled and well. Those whose duty it was to show and to explain the wares of their own or others' manufacture were dressed for the part they were to play, and they played it, too. The very first impression the visitor got when he sized up the human part of the exhibition was that it was for business, and with this plainly before them the visitors at once proceeded to talk business. The passing of the very foolish inclination to open the horse show and turn the automobile show into a cheap clothes and millinery exhibition speaks volumes for the ability of those who have already succeeded in making the manufacture and marketing of mechanical carriages a veritable miracle of rapid progress. That the public appreciated this was shown not only by the numbers who paid to see the show, and who, far in excess of any horse show, paid there and then to own samples of the vehicles they had come to see and study. Had the automobile show done nothing else but establish its drawing and its selling powers without any attempts at cheap costuming it deserved all the success it has achieved.

* * *

While all of the papers were filled with automobiles stories last week, it was but natural that some of those whose sole ambition in life it is to get themselves and their performances into print should have had their envy excited by the apparent ease with which the automobile rolled rapidly into the centre of the stage where the limelight of publicity was fiercest. Among others who were thus affected was a society fringeite whose name is a combination of that of a signer of the Declaration of Independence and the chilly requisite for sleigh riding which some much debated poet once wrote about as "beautiful." This owner of a wealthy and weatherly name summoned her chauffeur and bade him bear her speedily to Lakewood. The chauffeur speeded so swiftly that it was eighteen hours later when he and his employers arrived at their destination. The condition of the eighty miles of road over which this wonderful example of what an automobile failed to do is best judged by comparing the eighteen hours the automobile took with the eight and one-half hours that were required for a four-horse coach to be driven over the same route on the same day.

But I haven't the slightest doubt the lady who took the automobile ride was satisfied, because next day her trip was duly written up in all the dailies, and the story of her adventures was given a scare head the size of which certainly must have made even the prize fighters and chorus ladies on upper Broadway green with envy. In describing the thrilling experiences of this wonderful trip I don't think I ever read anything more thrilling than where in the course of her story the fair owner of the automobile told of how she, the automobile and the chauffeur finally reached a little New-Jersey roadside hotel, and after considerable trouble had succeeded in waking up the landlord, only to be informed by him that that hotel wasn't doing any sort of business, particularly automobile business, at 3 o'clock on a winter's morning. Said the lady to the reporter when he interviewed her about the affair: "Our whiskey flask was empty by this time, and you can imagine how we felt."

It would be a mighty queer reporter who could not imagine any one's feelings under such soul harrowing conditions of empty flaskness as the lady had set forth.

* * *

Capital and labor would commingle very much more freely in the automobile business if there weren't so many men in it trying to get capital without labor. Think that over.

* * *

A man who has lived in Europe for many years told me recently that the American's hypocritical fear of "the continental Sunday" had done more toward making the automobile a success than any other one thing. He said that when he first came back to this country he looked forward to the approach of Sunday with dread; there was no place for him to go and nothing to do in the way of amusing himself. Looking out on Fifth avenue from the windows of his club and studying the Sunday promenade there soon suggested a remedy, however. He noted there was a regular hegira of automobiles out of the city on Sunday mornings and return thereof on Sunday evenings. He was not slow to take the hint and to join the procession, with the result that he, like the others, is now happier and healthier, all because of the freedom begotten of the automobile's ability to get away from unpleasant surroundings while carrying its fortunate owners along with it.

* * *

"I was hit by a scorcher," he said with a curse,
When the men with the ambulance found him,
"And if I had my way he'd be scorching still worse,
With a strong smell of brimstone around him."

* * *

I won't mention any names, but it seems to have dawned upon some of those wonder workers who are anxious to tell the reporters the marvellous things they are going to do in the way of vehicular propulsion that it is much easier to let a thing go than it is to make it go. Automobiles are not exceptions to this rule.

* * *

I quite agree with the gentleman who told the members of the N. A. A. M. at their annual meeting that a leisurely fourteen miles an hour procession of motor vehicles over fairly good roads is not an "indurance test" of anything, unless perhaps it be of the patience of their drivers. Still, there are a few automobiles that can't survive even such a jaunt.

THE COMMENTATOR.

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GOOD ROADS AND CANALS

The Argument in Favor of one Appropriation for Both—A Long Wait Otherwise.

On the last day of the show in Madison Square Garden State Senator J. P. Allds met the Hon. George R. Bidwell in one of the aisles, and the talk between them turned at once to the subject of good roads. Senator Allds said he thought that any bill asking for several millions of dollars under the Higbie-Armstrong law would die in committee. The farmers would be against it. Under that plan the farmers had to feel the tax twice, and they would fight such an appropriation, but would support one which did not involve a direct tax on them. Senator Allds said he was of the opinion that the State should build the main roads anyhow and leave only the crossroads from the main highways to the county seat to be built by the farmers under the Higbie-Armstrong law. He recommended that the good roads people make a bold move and ask for an appropriation of $50,000,000, incorporated with the canal appropriation. This, he said, would be a measure that the farmers would support.

The suggestion seemed to be well received by those to whom Senator Allds mentioned it, but after his remarks had been published the Herald, of New York, criticised them editorially. It was fair, however, and the following day printed in full a letter from a reader who took exception to the editorial remarks. This letter contained such a sensible presentation of the situation that it is worthy of being read by all those who are working for improved highways in this State. The letter follows:

"To the Editor of The Herald:

"In your editorial this morning entitled 'Killing Two Birds with One Stone—Good Roads and Canals,' you refer to the coupling of the cost of canals and good roads together as a tricky and preposterous scheme, saying that this proposition for the betterment of roads is not made in good faith, but that it is made with the intention of killing both the Canal bill and the Good Roads bill.

"I desire to take issue with you in this matter. According to the report of the State Engineer and Surveyor of New York State, December 31 last, he had received petitions from forty-six counties asking for the improvement of 2,061 miles of highway. The counties and towns either had appropriated or were ready to appropriate their share of this expense, amounting in round figures to $8,000,000. The State last year appropriated $795,000 as its share, and if it continues to appropriate this sum each year it will take all of ten years before it can have appropriated the whole $8,000,000 required.

"The farmers throughout the State are not willing to wait ten years for the building of these roads, and, indeed, there are many counties and towns that are desirous of sending in petitions, but they are deterred because there seems, unless the State binds itself to build the roads, but little prospect of their wants being filled.

"It has been claimed that a proposition covering two things cannot be submitted to the people at the same time; that a plan to bond the State for $82,000,000 for canals and $50,000,000 for roads would not be legal. Why not submit a proposition to band the State for $132,000,000 for internal improvements—$82,000,000 for canals and $50,000,000 for roads? Are they not both internal improvements?

"I am sure that many farmers of the State will admit that the cities of New York and Buffalo, paying as they do a large proportion of the taxes, ought to have the canal, but they also feel that the Republican party owes a great deal to the farmer vote. What did the city of New York do for the Republican party at the last election? The Democratic majority in greater New York was 122,633, and had it not been for the Republican vote up the State, which gave but a narrow plurality of 8,803 votes, thus overcoming the great Democratic majority in New York City, the State would have gone Democratic. The farmer feels that on this occasion he saved the State, and that therefore the Republican party owes it to him to give him the good roads which he needs. It is a fact that according to the last United States census the value of farming lands in this State during the ten years preceding 1900 decreased $80,000,000, and I believe, any many others believe, that if the commercial supremacy of this State is to be retained it must be by improving the farming values by the building of good roads. There is no question but what the building of these State highways improves the value of properties near them. I know of one instance where because of the building of a State road in Westchester County a farm which was offered for sale at $3,500, and could not be sold, was recently sold for $7,000. I was told the other day by one of the board of supervisors of Orange County that farm values had increased over 25 per cent wherever a State road was built.

"I am sure that the up State farmer does not object to New York and Buffalo having the canal improved, although it brings the Western farmer into competition with him by bringing his produce to this State at a low rate, provided he at the same time secures better means of transportation over his country roads. The estimated cost per ton per mile over these roads is now 25 cents. If this can be reduced, not only is the farmer benefited, but the dweller in the city is also helped because the cost of transportation of foodstuffs to the city is reduced.

"A BELIEVER IN IMPROVED ROADS."

As the question of the good roads appropriation in New York State for 1903 is now pending before the State legislature, and President Shattuck of the Automobile Club and other prominent workers in the cause are at Albany seeking to obtain the best possible concessions, the facts about the situation in the State are of peculiar interest at the time.

While New York State leads all the other States in many things, yet she stands but seventh in the matter of railway mileage, having only 8,114 miles of railroad. The States of Illinois, Pennsylvania, Iowa, Ohio, Texas and Michigan have more miles of railway than this State. During the year 1901 the State of New York only increased its railway mileage by nineteen miles, while the State of Illinois increased hers by 180, the State of Ohio by 126, Michigan by 148 and Texas by 574 miles. This small increase is due to the fact that the railways of this State are controlled by a few great corporations, which are not at all interested in developing the resources of the State of New York, but simply care to develop their Western connections so as to bring produce to New York and have it compete with what is raised by the New York farmer.

In this State, according to the State Engineer's estimate, there are approximately 75,000 miles of highway—that is, wagon roads—and to maintain the commercial supremacy of the State it is essential, as the railways do not develop the State by building more miles of track, that those highways should be improved so that the farm produce may be more economically taken to the towns and railways.

Farming communities are unable to pay the cost of this improvement unaided, and the State therefore passed a law called the Higbie-Armstrong law, under which the State undertakes to pay half the cost of improving our roads. Since this law went into operation, some five years ago, 186 miles of State road have been built and 167 miles are in process of construction. As was pointed out by the Herald's correspondent, petitions have been received by the State Engineer for the improvement of highways amounting to 2,061 miles, and the towns and counties have appropriated, or are ready to appropriate, the sum of $8,000,000 for this improvement, and are only waiting for the State to appropriate a like amount so that these roads may be built. Last year the State appropriated for this purpose the sum of $795,000, and if each year from now on a similar amount is appropriated it will take about ten years to complete all the roads petitioned for. Many of the farmers of the State feel that they cannot wait so long a time to have their roads improved.

Governor Odell seems to appreciate the great demand [illegible] this State, for in his [illegible] legislature he said:

"The building of good roads has continued during the last year with gratifying results. So great is the demand for State aid that it will soon become necessary to have recourse to bond issues to meet these increasing obligations. If, therefore, any extension of time for the payment of bonds is authorized for canal improvement it should be made applicable for this purpose also."

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ATTACKS COCKS LAW

One of its Victims Assails its Contitutionality—Court Reserves Decision.

For a statute that has been attacked on nearly every possible side, the malodorous Cocks law possesses remarkable vitality. This week it came up again, and its constitutionality was assailed on a new ground—that of its contravention of the Fourteenth Amendment.

In the Appellate Division on Tuesday ex-Assistant District Attorney John D. Lindsay, in arguing an appeal taken by François Guichane, Archer Milton Huntington's chauffeur, from a judgment of the Court of Special Sessions, convicting him of a violation of the automobile speed law, attacked the statute on constitutional grounds.

Mr. Lindsay contended that the law contravened the Fourteenth Amendment to the United States constitution in that it denied to persons within the jurisdiction of this State the equal protection of the laws. While the law, said he, provided for the punishment of drivers of horses drawing vehicles or the operators of motor cars along public highways at excessive speed, it permitted any one else not within those two classes to drive or travel on the public roads at any rate of speed. He called attention to the fact that the law was silent in regard to everything except vehicles drawn by horses or motor vehicles. No penalty was provided for driving horses not drawing vehicles. The statute made no provision for the punishment of bicycle riders or the operators of other similar vehicles not coming within the motor vehicle class.

A statute, continued Mr. Lindsay, which forbade one man or class of men to do an act which other men or class of men were left at liberty to do, clearly would be invalid as not constituting due process of law, and that was precisely the sort of discrimination wrought by the law under discussion. Decision was reserved.

To Oppose Connecticut Repeal.

Connecticut autoists are not going to sit supinely by and have the admirable law of the State relating to automobile speed changed. Pointing to the fact that it has worked perfectly since its adoption nearly two years ago and is regarded as a model [illegible] is to be [illegible] bill increasing the maximum speed down from fifteen to eight miles an hour. The Hartford Automobile Club opposes it, and has taken steps to make its opposition effective. On Monday the Automobile Club of Bridgeport took action also. It decided to send a committee to Hartford to co-operate with the club of that city in opposing the passage of the bill.

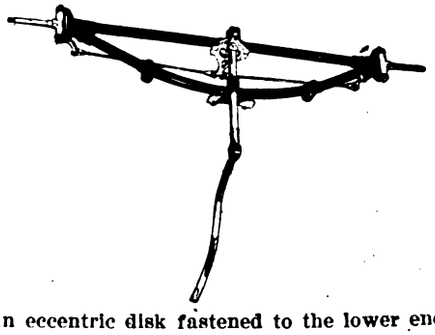
Foster Reorganization Effected.

Negotiations that have been pending for some little time looking to a reorganization of the Foster Automobile Co., Rochester, N. Y., have been brought to a successful conclusion, and the reorganization is now an accomplished fact. New capital has been subscribed and a new and vigorous policy will be at once inaugurated.

Meads' Eccentric Steering Device.

An ingenious steering device possessing some novel features has been patented and is being marketed by W. L. Mead, South Orange, N. J. With it in the centre position the wheels of the car will run steadily and without deflection, while but little pressure on the lever is required to turn the steering wheels to the right or the left.

The method of construction is as follows:



An eccentric disk fastened to the lower end of the steering post is surrounded by an eccentric strap, which forms part of a lever to which the links for the steering knuckles are connected. The lever is provided with an elongated slot, through which passes a pin or bolt fastened upon the front axle, which bolt acts as a pivot.

As shown, the device is applied to a lever steering gear. But it is equally applicable to wheel steering, and its advantages are equally apparent.

The "Goodrich Girl."

The "Goodrich girl" of 1903 represents "Aida," who comes from out of the dim past and from the Far East, and is the daughter of a king and princess of the blood royal. In courtly phrase she suggests in the announcement that accompanies her beautiful likeness that "The King's court will remain in the state apartments in the royal palace night and day, to receive your orders, which can only reach the throne when addressed to The B. F. Goodrich Co., Akron, Ohio." The picture is exceedingly attractive and is a valuable addition to the beautiful series to which the Goodrich Company adds each year.

Solar in the East.

An Eastern office has been opened by the Badger Brass Mfg. Co., of Kenosha, Wis., at No. 11 Warren street, New York. A full stock of Solar lamps and parts will be carried in stock.

William Morgan, formerly sales manager for the Autocar Co., has been appointed manager of the Philadelphia branch of the Locomobile Co. of America.

YEAR'S EXPORTS TRIPLED

"Infant Industry" Makes a Good Showing for Twelve Months, Although December was "off."

For an "infant industry" the American automobile trade is doing uncommonly well in obtaining increasing recognition in foreign marts. The export returns for the year 1902, which have just been issued, show our foreign trade to have increased nearly 300 per cent. during the twelve months—from $367,371 in 1901 to $1,069,782 in 1902. The closing month was one of the very few that failed to develop a gain, the shipment aggregating in value $43,699, as against $65,451 in December, 1901. As yet the export statistics as they relate to automobiles are lumped under one head, and the exact distribution of the year's shipments is not, therefore, made plain.

Injured Employe Loses Suit.

After a trial lasting two days the B. F. Goodrich Co., the well known tire makers, of Akron, Ohio, on Monday of last week won a case of interest to manufacturers generally.

David Davis, an employe of the company, was injured while working at a calender in their factory on April 10, 1899, with the result that his left arm had to be amputated. He sued for $30,000 damages early in 1900, and the case came on trial on January 21 last. Davis alleged that it was through the negligence of the company and defects in the machinery that he was hurt. The defence was that he knew the nature of his work and of the machinery on which he was employed, and was hurt by his own negligence. Davis preferred a contest to a settlement out of court, but failed to prove to the jury that the machinery was defective.

Recent Incorporation.

East Orange, N. J.—Tennant Auto-Tire Co., with $300,000 capital, to manufacture pneumatic tires. Incorporators: Fred. L. Palmer, Chas. O. Geyer, Frank C. Ferguson.

Cranford, N. J.—United Motor and Vehicle Co., with $300,000 capital, to manufacture motor vehicles. Incorporators: Eugene W. Austin, Austin E. Kirby, Wm. Hughes.

Gillette Incorporates.

With a capital of $3,000, $1,000 of which has been paid in, the Gillette Athletic Goods Corporation has been organized at Hartford, Conn. A retail business in automobiles, bicycles and athletics goods will be transacter. Norman Gillette is president and treasurer, H. B. Freeman, jr., vice-president, and J. J. McKone, secretary.

Changes its Name.

In order to avoid confliction with other concerns with somewhat similar titles, the Reading Automobile & Gear Co., of Reading, Pa., has changed its name to the Relay Motor Car Co. The change does not otherwise affect the concern.

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MOBILE'S GREAT GARAGE

Features of the Biggest Storage Place Yet Opened—New Ideas to Be Used.

Spaciousness, style and completeness of appointment are characteristics of the latest automobile depots established or projected, and the indications are that before long there will be in New York City several garages and salesrooms as well equipped as those of Europe.

Among the latest places to be opened, the metropolitan headquarters of the Mobile Company of America, at Broadway and Fifty-fourth street, will be one on a scale hard to rival. Possession of the building was obtained by the company on February 1, and it will be formally opened on February 15. Through the courtesy of General Manager E. B. Galleher, a Motor World man made a tour of the building on Tuesday and had indicated to him how the big place would be laid out for work. The building has seven stories above a basement and a cellar, and the size of its floors may be imagined from the fact that on the third and fourth floors, which are being temporarily used by Burr & Co., the former tenants, there are now standing eighty-six carriages of different sizes, many of them two-horse broughams, surreys, etc. It is calculated that beside the room used for offices, show rooms, repair shops and so on, there will be room aplenty for 200 automobiles.

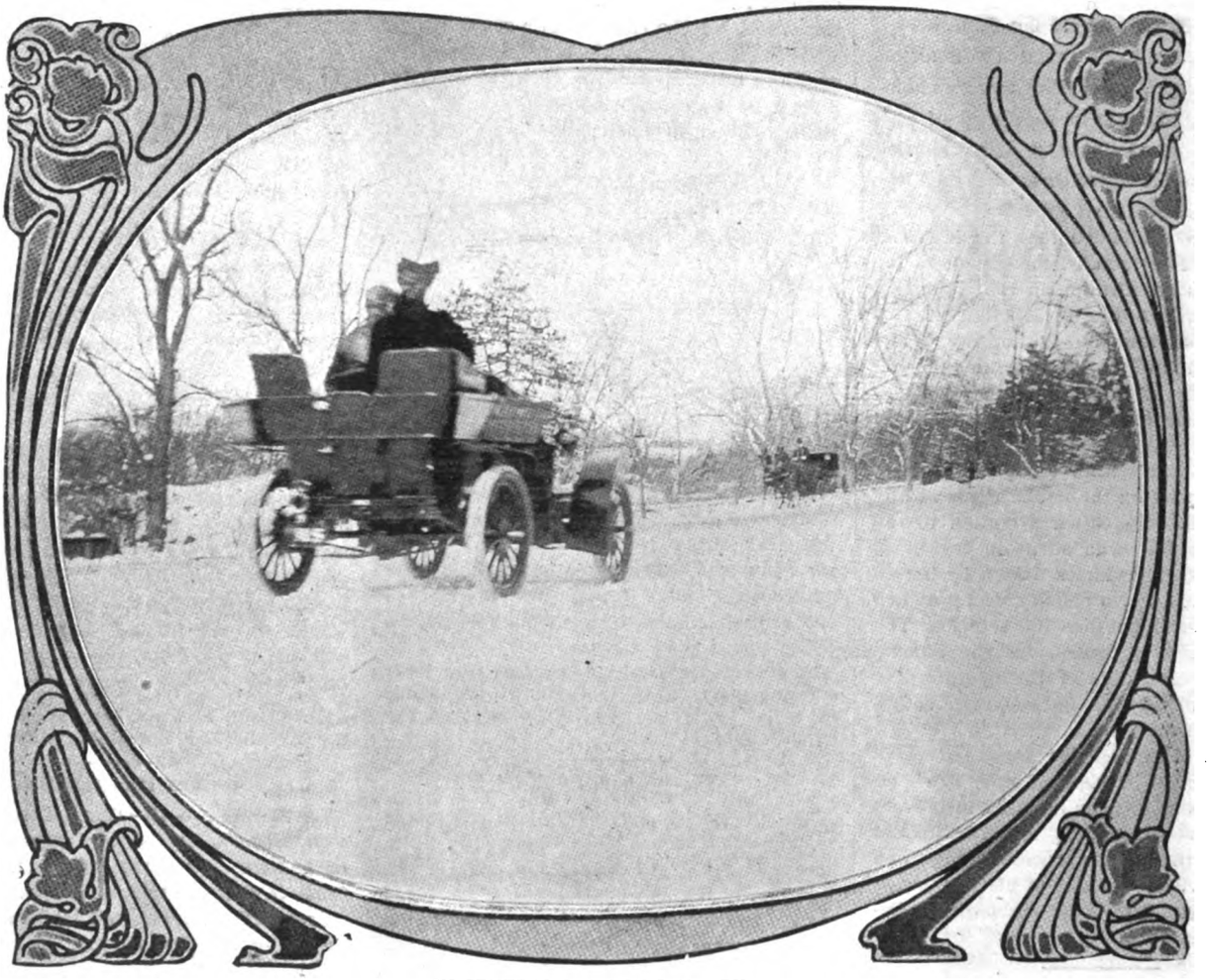
From the Fifty-fourth street side there is a driveway directly on to an elevator that is roomy enough to take on the largest sort of touring car. If the car is to be washed it goes down to the cellar, where a washing table, 23 by 27 feet, has been just completed. The cellar is cemented and exceptionally dry, and it, as well as the floors above, will be used for storage. Another part of the cellar is set apart for the use of chauffeurs, with lockers and wash room for them.

It is striking to find the floor plans and fittings of the building as perfectly adapted to the requirements of an automobile establishment as if it had been especially built for the purpose. This is due to its having been laid out for a carriage repository by Burr & Co. The show room will be on the main floor, which is lighted by windows on two sides. Here are found already installed two comforfably arranged and heated waiting rooms.

The second floor will be used for offices and the third, fourth, fifth and sixth floors for storage. On the seventh floor will be a repair shop almost as extensive as a small factory, with power machinery, painting and varnishing rooms and upholstering rooms, which are already there, having been built by the former tenant.

An idea of General Manager Galleher that will be put into operation in this big and elaborate establishment is that of having every car carefully inspected by expert workmen every time it is brought into the garage. No charge will be made for this, but it will serve the purpose of informing the manager and the owner of the condition of the car when brought in from the road. If a cracked gearcase, loose flywheel or any other trouble is found that may have escaped the notice of the owner, he will be promptly notified by card of the repairs needed and an estimate of the cost of them will be sent to him at the same time, so that he will not unwittingly have the risk of taking out a car that is in unfit condition.

A. S. Robinson, lately with the Searchmont Company, has joined the Mobile forces as the personal assistant of Manager Galleher.



IN CENTRAL PARK IN JANUARY.

Fournier says the authorities here should allow at least one long-distance speed test every year on the road. He is quite correct, and there probably will be if properly approached and proper safeguards against accidents are assured.

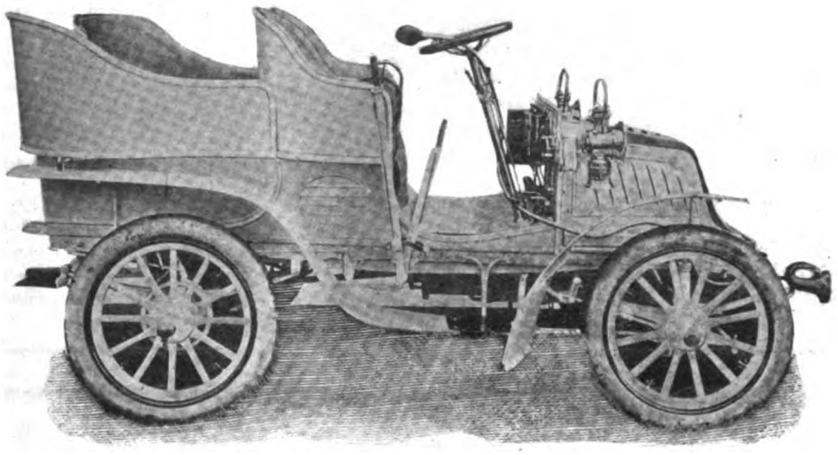
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BRANDES AND THE CUDELLS

Who he is and Something About his German Cars—Big Order Booked for Wagons.

There are not many men who compress into but little over a score of years so much activity and industry as stands to the credit of J. C. Brandes, who came to this country a short time ago to represent Cudell & Co., of Aix-la-Chapelle.

On the one hand, he has behind him a career with the Krupp and the Maxim-Vicker companies, those gigantic concerns which stand for so much in the foreign industrial world; on the other, he has served an apprenticeship in the German army, having been wounded during the march to Peking



in the Chinese war—and still holds his commission as lieutenant, ready to accept service at the Kaiser's call. In each capacity the qualities of brain and body are called upin to do their utmost, and the graduate from such schools is, ipse facto, stamped as a man of unusual parts.

Having made, in addition, a thorough study of the automobile business, Mr. Brandes is remarkably well equipped to make a success of his undertaking. A pleasing personality, and a quiet, confident air, backed oy goods of acknowledged merit, all tend to lesson the difficulty of his task, and the amount of success that has already fallen to him is assurance that the matter is in safe hands.

Some misconception having arisen concerning the matter, it is timely to say that Mr. Brandes is the sole United States agent for Cudell & Co., Aix-la-Chapelle, one of the largest automobile concerns in Europe. With offices at No. 28 West Thirty-third street, and garage at No. 121-123 West Thirty-first street, this city, he will market 6, 8, 12 and 16 horsepower gasolene motorettes and touring cars, and also delivery wagons and trucks. The first consignment is already here, and large shipments are on the way. These cars will be sold at prices considerably lower than other cars of corresponding quality—probably as much as 20 per cent.

The illustration shows one of the 12 horsepower cars, which differs slightly from the later models of this size. In the latter, as well as future shipments of cars, the tonneau body is longer and more roomy, the steering column has a more pronounced rake and in other respects improvements have been made. There will be four speeds forward and a reverse, all operated by one lever.

Although in this country but such a short time Mr. Brandes has been hard at work. One day last week he drove a car 180 miles on the Boston Post road, giving a prospective purchaser a splendid demonstration of the good qualities of the car.

In the commercial vehicle line a contract has already been closed with one of the largest department stores in the city for a number of Cudell delivery wagons, which, if its terms were known, would astonish many people in the trade.

Claimed Better Than Throttling.

"The Panhard idea of supplying extra power just when it is required is better than merely working a large engine very much throttled down, which means an increased cost in running, as a considerable amount of wear and tear, to say nothing of unnecessary friction, is taking place," remarks a transatlantic writer.

"If, instead of gearing, there was the power to throw into action one or more additional cylinders when hill work or bad roads are encountered, and if the mechanism were so arranged that when not required for use these cylinders should be entirely at rest, the result might be better. A further advantage would be that in the event of a breakdown occurring to what may be called the main engine, it would be possible to run the car with the extra cylinders by a very simple alteration of the machinery. The cost of constructing a small motor of about 2 horsepower is not great, and if two or three of these were so arranged that they could be brought into action to assist the main engine when the latter dropped below a certain rate the result would be better, and the cost not much greater than the very expensive gear boxes now provided."

SOURCE OF WEAK SPARKS

Little-Suspected Cause of Trouble, Where to Seek for and how to Correct it.

In setting up a new sparking plug the first thing to be seen to is that the ends of the platinum sparking points are flat and parallel. In cutting off the wire for these points a pair of cutting pliers are used, with the result that the ends are left in the shape of a broad V. Now, as the sharp edge of the V are likely to be at any angle to one another, it generally happens that the actual sparking areas are but little more than equal to the diameter of a very small pin. The natural result is that a weak spark is produced, and the novice may look for a very long time before finding the real cause of it. What is required for the highest point of efficiency is two flat surfaces parallel to and opposite one another—simple conditions, but difficult to fulfil.

To attain the best conditions for the sparking plug points it is first necessary to reduce the V points to a flat surface, and this is best done with a jeweller's or any thin flat file. Having got the points up flat and parallel, they must next be set up to their correct distance. This distance is variously given as one millimetre, one-thirty-second of an inch and the thickness of a visiting card—whatever that may be—but the distance really depends upon the power of the coil and the resistance offered by the compression of the cylinder charge. Naturally, a powerful coil with a good voltage behind it will give a "fat" and hot spark, but this may easily be offset to a certain extent by high compression. The best practice is, then, to find by experiment the most efficient position of the points and to have a permanent guide in the form of a gauge to set them up to. This gauge may be a piece of sheet metal, and once obtained should be religiously preserved.

To set up the sparking points correctly a pair of flat nosed toggle jointed pliers are required. This type of tool is specified as its jaws are always parallel, and by its use the points may always be set correctly in line without trouble, while for other purposes they are equally useful. The keeping of the points parallel vertically is a matter of judgment by the eye, while the gauge looks after the distance. It is advisable to always set up and test spare plugs before putting them into the "spares" compartment in the car or tool bag, as this will frequently save time and trouble on the road.

To charge the average runabout battery there are required about seventy-five ampere hours of electricity a day. An ampere hour is one ampere flowing for one hour.

The Cadillac gasolene car will hereafter be handled by John Wanamaker at his New York and Philadelphia stores.

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Electrical Device From Somerville.

Several electrical devices of more than ordinary interest have been brought out for the 1903 season by the American Coil Co., West Somerville, Mass. Among them are an entirely new automatic spark coil, a new dynamo called the Little Wonder and a pocket ammeter.

The automatic coil is so constructed as to operate both as a vibrator and plain coil—that is. it operates as a vibrator coil giving a shower of sparks for starting and up to a speed at which the common vibrator coil would refuse to operate, when it automatically changes to a plain coil giving a single make and break spark, and the engine may be speeded to any speed desired without the coil refusing to work, and as soon as the engine is slowed down the coil again becomes a vibrator coil, as before. The advantages of such a coil are apparent, as the make and break device used with this coil is the same as that used on a plain coil, having short contact and a quick break, while the contact on the ordinary vibrator coil must have a long contact in order that the engine may be run at a fairly high rate of speed. This long contact is very hard on the batteries, while the short contact allowed by the use of the new coil brings the battery consumption down to that of the plain coil. There is little liability of vibrator sticking, and even if it does stick, instead of refusing to spark, as is the case with the ordinary vibrator coil, this one works right along as a plain coil.

The Little Wonder dynamo is very compact, and has a system of storage in the base which does away with all use for extra batteries for starting, as the engine is started from the storage, while this storage is kept constant by the dynamo. The storage is very compact, all being confined in the small base of the dynamo, which is only 1½ inch by 4 inches by 6 inches. The dynamo, storage and all will weigh less than fourteen pounds. The bearings of the dynamo are very long, and the oiling is done by rings running in oil cups.

The pocket ammeter measures up to fifteen amperes, and is claimed by the company to be the only reliable pocket ammeter on the market. While not as absolutely correct as an instrument costing $100 or $150, it will measure the output of a set of cells within one-half ampere, and this is near enough for all practical purposes. Every owner or operator of a gasolene car using electric ignition should have one of these little instruments, as by its use he is able to tell the exact state of his batteries at all times.

The Week's Exports.

Cuba.—1 case motor vehicles, $553.

London.—12 cases motor vehicles, $845.

Liverpool.—28 cases motor vehicles, $13,305.

Two Big Tournaments in Prospect.

Plans are on foot to inaugurate automobile racing on an extensive scale at Charter Oak Park, Hartford, Conn., and Oakley Park, Cincinnati, Ohio, both owned by Andrew Welch, of the former place.

It is proposed to start off at Charter Oak on May 30 and at Oakley on July 4, Henry Fournier to be the star on both occasions if he can be induced to come here in time. Big purses, variously stated as amounting from $10,000 to $50,000, will be offered, and the best racing men of this country and Europe secured.

"What they have in France is what we are going to have right at Charter Oak," Welch told a Hartford reporter. "I took breakfast with Fournier the other morning in New York. 'I am out for the money,' he said. 'You hang up big purses and you will find all of the cracks at Charter Oak.'

"Now, that is just what we are going to do. The meeting will attract from all over the country, will be the only big one, and the attendance will justify the posting of $50,000 worth of prizes."

Locomobile's New Branch in Boston.

Having outgrown their old quarters at No. 332 Boylston street, Boston, the Locomobile Co. of America has been obliged to remove to No. 13-15 Berkeley street, where, instead of being confined to a single floor and basement, the entire building is occupied.

Chicago Automobile Show

COLISEUM, FEBRUARY 14-21.

REDUCED RAILROAD RATES.

The Central Passenger Association
Western Passenger Association
Trunk Line Association
New England Association

have granted reduced rates an account of the Good Roads Convention of the National Association of Automobile Manufacturers, to be held at the Coliseum, Chicago, during the Chicago Automobile Show, Feb. 14 to 21, 1903,

These associations cover all the territory between Cheyenne, Wyo., (including all Points in Colorado) and the Atlantic coast.

Note These Instructions Carefully.

On purchasing ticket for the trip to Chicago, ask the ticket agent for a certificate **on account of the Good Roads Convention of the National Association of Automobile Manufacturers.**

On your arrival at the Coliseum present it at once to the railroad agent who will be in attendance from Monday to Saturday. He will certify that you have been in attendance, but it is necessary for him to know that there are at least 100 holders of certificates, hence the necessity of delivering them to him immediately on arrival.

Your certificate, when presented at the depot, will entitle you to buy your return ticket at one-third of the regular fare,

Tickets for return journey will be furnished only on certificates dated not more than three days before the opening of the convention, nor more than two days after the first day of the convention, and presented within three days after convention closes. Sunday will not be reckoned as one of the three days either before the opening date or after the closing date, and all return tickets will be for continuous passage.

EVERY PROMINENT MAKER WILL EXHIBIT.

Morning Sessions Free to the Trade.

SAMUEL A. MILES, Mgr., Monon Bldg., CHICAGO.

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TALKED OF THE SHOW

A. C. A. Members Exchange Views and Extol American Cars—Electrical Makers Blamed.

A call for the informal Tuesday night talk at the Automobile Club of America this week was responded to by a score of members, who wanted to hear others talk about "Lessons from the Automobile Exhibition." In the absence of President Shattuck, who was at Albany, busy looking after the proposed changes in the automobile laws, First Vice-President W. E. Scarritt presided, and he launched the discussion.

Mr. Scarritt extolled the exhibits at the show and the affair as a whole in lavish terms. He laughingly remarked that while many undoubtedly lied cheerfully about their sales, there was no doubt but what the sales were tremendous, and he predicted unflinchingly that within three or four months there will be a great dearth of machines. Both in his preliminary remarks and in those which he dropped when calling upon different members to speak, Mr. Scarritt repeatedly referred chidingly to the proneness of Americans to pay exorbitant prices for foreign made cars. He said:

"A man buys a Mercedes for $12,000, six dollars a pound mark you. Forty-five per cent. of that is for duty, 25 per cent. more is for the agent and another fat percentage is for the name. It is a grand car, the greatest in the world—I wish I had three or four of them—but what a lot of money to pay for what is not in the car. What an encouragement it is to American manufacturers to know that such an amount of money will be gladly paid for a perfect car! In this is the greatest reason to urge America only to build the best. The assurance is at hand that plenty are willing to pay for it. I believe that the American maker is even now on the eve of bringing out cars as good or very nearly as good as any made abroad."

George A. Adams said that in his opinion what is wanted is greater simplicity in the American car, because there are not many who can afford a highly complicated machine and a high priced chauffeur to take care of it. His idea was that a car of one or two cylinders which the ordinary man can handle himself is what is wanted, and he stated that in this respect we are ahead of the foreigners and should keep ahead. He called attention to the fact that in the Boston endurance run the cars of simpler construction got through better than the big multi-cylinder affairs. He thought that the show was a grand one which revealed the fact that the majority of manufacturers are trying to make a standard article.

Fred. G. Bourne said he was impressed at the show with the progress made by American makers in copying foreign machines. He was himself a Mercedes man, and he dwelt eulogistically upon the beautiful running qualities of that car. He admitted though that he had seen many cars at the show which were close seconds to the foreign built cars, and told of a trip with A. L. Riker in a gasolene Locomobile, which, he said, was a revelation to him, for it could be run fast or slow with an ease and noiselessness nearly equal to that of the Mercedes.

E. T. Birdsall said that while it might seem that there was a fad at present for mechanically operated valves, steel frames and multi-cylinder engines, he believed that the four-cylinder type of engine had come to stay.

A. L. McMurtry, fresh from the Paris show, was inclined to scoff at American construction and to believe that the work done here in no way equals that of the French. He said that in castings, in ignition devices and even tires we are far behind the Europeans. The American maker is badly handicapped, he thinks, by the people in the electrical business, who are to blame for not having arisen to the occasion. It makes no difference whether we build one, two or four cylinder engines and have mechanical valves or not, in his opinion, so long as our ignition devices remain as faulty as they are. He condemned the dry cells, of which he said he had not seen one in Paris, and he condemned the poor spark coils and the careless methods of wiring, using a breakable copper wire for the entire reach and then twisting the end of it about the spark plug. He also condemned the tendency of American makers to cling to sun and planet gearing, which he contends gets hot very quickly when the car is being run on the low speed gear. Under questioning about mechanical valves and other technical matters, Mr. McMurtry was very interesting.

Emerson Brooks said he believed the aluminum body had come to stay, and in his opinion the time is near at hand when the American manufacturer of automobiles will follow the example of the French and sell the chassis only, allowing the customer to get his own carriage body anywhere he chooses.

Robert L. Niles in a very humorous talk said he was disappointed in the show because there was nothing there for a poor man.

A luncheon followed the talk.

First Run Called.

The first run for 1903 of the Automobile Club of America will be held on Monday, February 23, and it will be from Lakewood to New York. The members are to report at the Lakewood Hotel on the Saturday night before at 6 o'clock. Sunday will be spent in making short trips through the adjacent country, and presumably the private speedway recently constructed near there will be tested.

The start for New York will be made at 9 o'clock Monday morning. This is an unusually early date for a club run, and the idea is that it will prove to the public that the cars of the club members are not simply fair weather vehicles

COMPETING WITH STREET CARS

John Brisben Walker's Enlarged Rapid Transit Plans—No Standing in his Motor Cars.

With John Brisben Walker and the Mobile Company of America behind it, a plan is being developed for an addition to the rapid transit facilities of New York City that will surprise the residents.

The Mobile Rapid Transit Company has been formed, and a bill has been introduced into the New York State Legislature by Senator Foley, defining the privileges of companies operating stage lines. This bill is supposed to be largely in the interest of the Mobile Rapid Transit Company.

The plans, as far as formulated, are for the company to put into operation five thousand steam coaches, each capable of seating fourteen passengers, and operating these on a number of different direct routes. The cars will run in the main lines of travel, but will be operated differently from stages, in that they will not be constantly stopping to let off or take on passengers. No more passengers than there are seats for will be taken aboard at any time, and when the cars are filled they will not stop en route to take on another fare, but they will let off passengers who do not want to go the length of the route.

The routes will be between points of travel, such as ferries, railroad stations, the Bridge and so on. Lines will probably be operated from the shopping district up Fifth avenue to 110th street, from the Grand Central Depot to the various ferries and across town between railroad ferries. It is probable also that the stage lines operated by Mr. Walker something more than a year ago, from Wall street ferry to Courtlandt and Twenty-third street ferries, will be revived. This was run long enough to demonstrate the practicability of the plan, although no money was made from the venture.

Mr. Walker says he is satisfied that automobile coaches must solve the problem of the overcrowded streets and railway cars of New York. In his 'busses there will be no straps, for no one will be allowed to stand.

"New" Things That are not New.

Many alleged new things are really old ones rejuvenated. An instance of this is the three cylinder motor, which was brought out with such a flourish of trumpets at the Paris show. It is well known that the Gasmobile and the Duryea used the triple cylinder motor for years, and now it has been "discovered" that a French car, the Cannoise, with a similar engine, was built and in use five years ago. In this case its designer had experimented with four and two cylinder motors, but dropped both, being convinced that the three or six cylindered engine alone could be properly and effectively balanced.

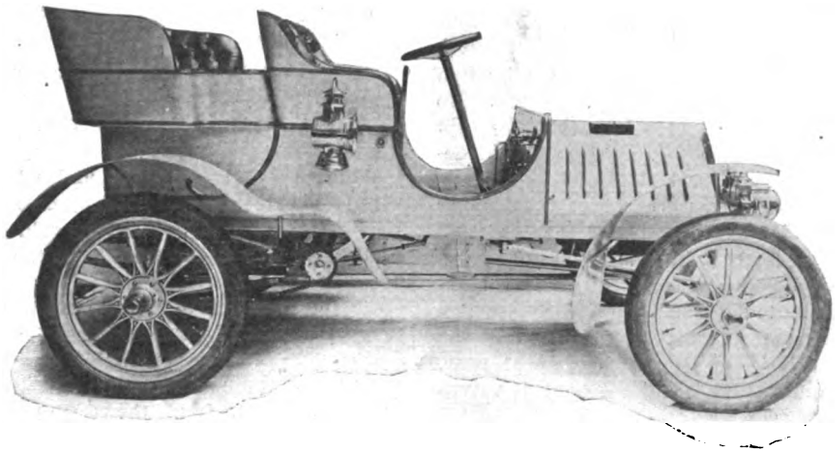
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METEORS FROM READING

Steamers all and a Tonneau Amongst Them—Some of the Features Incorporated.

One of the steam makers who possess the courage of their convictions and carry through an aggressive policy is the Meteor Engineering Co., Reading, Pa. This enterprising concern not only proceeds along sound lines, but it had the foresight to see the opportunity that exists for a type of car out of the ordinary, and by grasping it place itself in a highly advantageous position.

In addition to its runabout and touring car models, the Meteor company is now producing a steam tonneau of the most approved modern type. In appearance it is scarcely distinguishable from a gasolene car, it having the same long, low and massive appearance, with bonnet, wheel steering and other paraphernalia formerly always associated with the forengn cars. This model received a very large amount of attention at the Madison Square Garden show, and bids fair to prove extremely popular.



This car, which has detachable tonneau seats and divided front seats, lists at $2,000. It is fitted with a 10 horsepower engine having 3½x4 inch cylinders, of slide valve Stevenson link motion type, which is placed in a horizontal position under the footboard, making it very convenient and easy of access. It is covered with a dust proof case from the bottom, and protected from the top by the footboard. The boiler is placed in the front under a bonnet, as is all the piping. The boiler is of 20 inches diameter, with 713 flues, and three-sixteenth inch steel shell, and has a heating surface of about 100 square feet. The burner is of large diameter, and is fitted to the boiler in a very neat manner; the shell of the boiler extends down considerably beyond the crown sheet, which answers for the burner case. The burner is a three compartment burner, with three mixing tubes.

The starting apparatus is a patented device and is an unusually simple method for starting the fire, no auxiliary torch of any kind being required. The car is fitted with the Overman steam water and air pumps, as well as a forced draught and steam syphon, or water lift. The non-breakable Klinger water guage, steam and air gauges, as well as the valve wheels for operating syphon, forced draught, water and air pumps, gasolene and auxiliary throttle valves, are directly in front and within easy reach of the operator. The lubricator is also in a very convenient place, directly in the centre of the carriage on the front of the footboard. This is a positive feed to the cylinders, connected to the water pump plunger, and is sure to feed oil if the car is driven by steam pressure, coasting, or otherwise.

The piping throughout is of one-quarter inch diameter, thus preventing any possibility of their clogging. The gasolene tank, of twelve gallon capacity, is placed in the front end under the seat. The water tank, of forty-five gallon capacity, extends from the rear end of the front seat down under the footboard of the tonneau seats, and extends four inches under the sills of the body. The filling caps for both water and gasolene tanks are under the left cushion of the front seat. The car is fitted with a combined feed water heater and muffler.

The driving is done from the engine to a counter-shaft by a heavy roller chain, and from the ends of the counter-shaft to each rear wheel by separate chains. The equalizing gear is directly in the centre of the counter-shaft. A very desirable feature of the counter-shaft is the flexible manner in which it is hung, and not bolted to the body or chassis on both ends. The counter-shaft is hung at its centre on a rocker plate, fastened to a cross section of angle iron. The feature of this construction is that the counter-shaft bearings and sprockets are always in perfect alignment with the rear axle bearings and sprockets, and are not affected by the vibration and twisting of the body, which is sure to result with a long wheel base in driving over uneven places, no matter how strongly the car may be supported by angle or channel iron.

There are two double acting band brakes on each rear hub connected to a single lever. The lever is of a locking and ratchet variety, which locks the brake in a fixed position without compelling the operator to keep his foot on same continually. The steering is done by a wheel, and the main throttle is operated directly in the centre of the large steering wheel. The reversing is done by a lever on the side of the car, and the by-pass is placed just outside of the body.

The wheels are of the popular artillery pattern, 30 inches in diameter, with 3* inch detachable tires. The front and rear wheels have ball bearings of large diameter, of a construction used for years with perfect success. The angle iron frame of the chassis is mounted on four eliptic springs.

Single Cylinder's Doom Predicted.

"It does not need much foresight to see that the days of the single cylinder engine, even for small cars, are numbered. Nobody who has had experience of the double cylinder type can fail to admit the great advantages which that pattern gives, not only in comfort, but in actual wearing powers," says an advocate of the multiple cylinder type of car.

"It is now pretty well admitted that, even for a small car at least 5 horsepower or 6 horsepower is required, and, although motors of greater horsepower than this are constructed with single cylinders, the strain which such engines put upon the working parts of the car, and also upon themselves, is so great that the cost of upkeep—that is to say, of necessary repairs and replacements—is a considerable item, and would be saved, to a great extent, were a twin cylinder motor employed. Indeed, the tendency in France is to use four cylinders for even small cars.

"It may next be asked whether the cylinders shall be horizontal or vertical, and in this opinions differ very widely. So far as the high speed motors are concerned, the rule is to place the cylinders vertically, and there can be no doubt that with this position a better system of lubrication can be adopted. On the other hand, with slow speed engines the horizontal position is usually favored for the reason that it greatly reduces vibration and does not tend to set up that jumping action, when the car is running slowly, which is apparent with the vertical class of motor. But the slow speed engine is given to wear badly, so far as the bearings are concerned, owing to the thumping action to which they are subjected, and, therefore, they require more looking after."

Mors Workmen on Strike.

A strike, with a resulting lockout, has occurred at the Mors factory, at Paris, and if of long continuance will entail serious delays in deliveries. The trouble arose over the attempt of the workmen to obtain the dismissal of an unpopular foreman. The management stood by him and the men went out.

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BAY STATE'S DRASTIC BILL

Forbids use of Cars Capable of Better Than 20 Miles and is Otherwise Obnoxious.

What the Bay State solons do not know about automobiles is indicated by a bill introduced in the Massachusetts legislature last week, one of the provisions of which prohibits the licensing of any car that can travel at a rate in excess of twenty miles an hour. The bill is a drastic one, as this clause indicates.

The measure, which has been referred to the Committee on Roads and Bridges, proposes that all automobiles and operators in the commonwealth shall be licensed by the Massachusetts Highway Commission, which, by the provisions of the bill, really becomes the supervisor of automobiles. The bill provides that no one shall use an automobile unless he or she is registered, which, if literally interpreted, will prevent in a great measure visitors from other States touring through Massachusetts.

The provision that is apt to cause the greatest trouble is, however, the section which provides that no automobile having a maximum speed of over twenty miles an hour, "or at that rate for any part of an hour," shall be licensed. Whether the claim of the maker, or user, or actual test will determine this is not stated.

The speed at which an automobile can be run outside city or town limits is placed at not exceeding fifteen miles an hour, and within city or town limits to eight miles an hour.

The bill further provides that all automobiles shall carry on the sides and back Roman numbers not less than four inches in height, and to correspond to the registration number granted by the Highway Commission. The penalty for violation of the registration clause is a fine of $100 or imprisonment for ten days, or both; the penalty for the infraction of the speed limit is a fine of $200 or imprisonment for a term not exceeding ten days.

The measure is only the first of a number of bills that are being prepared for presentation to the legislature. One has been prepared by the law and ordinance committee of the Massachusetts Automobile Club. It contains two sections, one limiting the speed to not over twenty miles an hour outside the city limits, and the other forbidding a town or city to limit the speed to less than twelve miles an hour, and giving park commissioners authority to make their own rules and regulations.

A second bill has been prepared by the club, and is of greater scope, although the speed requirements are practically the same as in the first bill. This bill requires all machines to have good and sufficient brakes, bell, horn or other signalling device; the owner's initials on each side of the machine. It provides that automobilists shall not be required to take out a license.

Another proposed bill, which it is understood was filed, provides for a uniform law throughout the State, the registering of all automobiles, numbers properly displayed, carrying of lamps in front and rear of machines, speed limit of twenty miles an hour in the country, fifteen miles an hour in open streets of cities, and eight miles an hour in the business section.

It is probable that still other bills will be introduced under a suspension of the rules when the legislature reconvenes.

Is President of Two Clubs.

It is not often that the same man is president of two automobile clubs, but through his election as president of the Pasadena Automobile Club Ellicott Evans has that distinction. He is president also of the Buffalo Automobile Club.

The other officers of the California organization are as follows: King Macomber, vice-president; C. B. Scoville, second vice-president and treasurer; J. T. Pugh, secretary, and the following, with the officers, a board of governors; J. T. Pugh, Tracy Drake, H. T. Kendall, H. J. Macomber, R. H. Gaylord and J. B. Miller.

One of the objects of the club is to discourage and, if possible, eliminate reckless speeding, and another object is to induce the City Council to moderate the speed laws, which at present declare that the auto shall not travel faster than eight miles an hour inside the city limits and four miles an hour across street crossings. They would like to have these rates of speed made twelve and eight miles, respectively. They will invite the councilmen to go riding with them, and will attempt to demonstrate that the speed limits are now too slow.

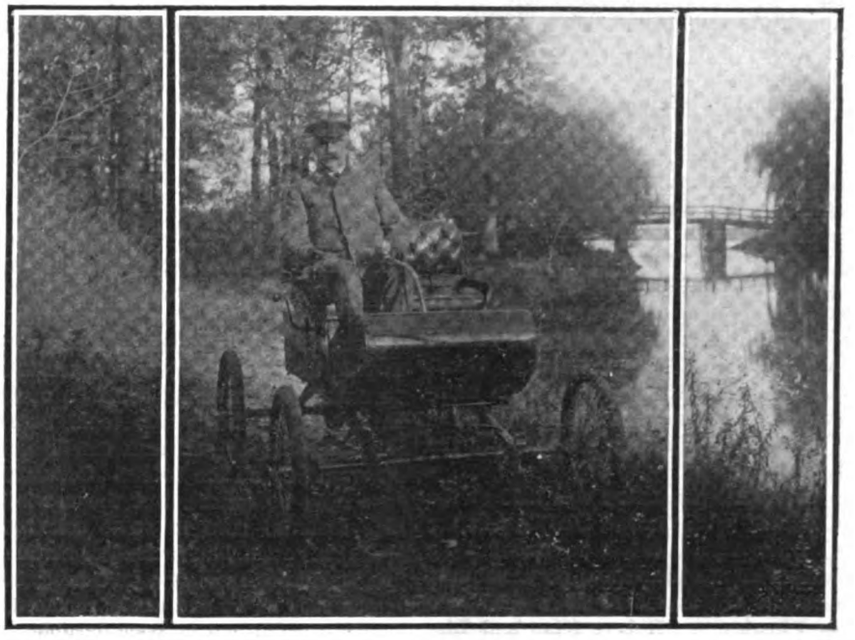
MAINE'S REASONABLE MEASURE

Law Introduced That is at Once Simple and Fair to all Concerned.

That rare thing, a bill drawn in the interests of autoists, rather than aimed at them, has been introduced in the Maine legislature. It provides for speeds of eight and twenty miles in the towns and country, respectively, uniform throughout the State. No license clause or other irksome and injudicious features are embodied in the measure, and it will in consequence be heartily supported by autoists through the country.

"The bill is good, cleanly drawn and fair, and we have great hopes that it will be passed," said A. M. Spear, of F. O. Bailey & Co., Portland. "There is surely great interest behind it, and it will be of signal benefit to motor carriage owners. At the legislature it was introduced by C. P. Hatch, of Portland, and there was also present at its introduction a considerable delegation from other towns and cities.

"We have hastened to present the bill because of the fear that some other parties might put in another which would deprive automobile drivers in this State of the rights and privileges which should be theirs by right. Were this bill passed it would bring to our State large numbers of tourists who have hitherto refrained from coming owing to the want of privileges which have existed in Maine."



AN OLDSMOBILE IN A PICTURESQUE SETTING.

A trial jury at Pittsburg, Pa., has disagreed and been discharged after listening to a case brought against the owner of an automobile by the occupants of a buggy whose horse became frightened, ran away and threw them over a bridge. The case was that of C. C. Smith and J. L. Smith and wife against Thomas Wittner. The jury was out twenty-four hours.

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Preparing for Cold Snaps.

These are the days when it is wise to have ready in one's motor house, and stored away in glass or earthenware vessels for preference, sufficient anti-freezing solution to fill up one's water tank in case of a sudden cold snap. Frost usually finds one unprepared, whereas if the anti-freezing mixture is all ready for use it is a very simple matter to fill up the water tank with it.

As is well known, there are two excellent solutions for this purpose. One of these may be a mixture consisting of one part of glycerine and one part of water. It is expensive, but quite efficient. Another and less expensive solution can be made up as follows: To every gallon of warm water add four pounds of commercial calcium of chloride (the chemical formula being $Ca\ Cl_2$). It should be thoroughly stirred while mixing. Care must be taken that chloride of lime ($Ca\ O\ Cl_2$) is not obtained by mistake, as this has, of course a very deleterious effect on metals.

It has been proved by careful experiment that a solution of calcium of chloride has no bad effect on either the metal of the cylinders or of the tank, except in the case of tanks made of galvanized iron or zinc, so for cars fitted in this way it is better to use the glycerine solution.

Club Formed in Pittsburg.

Pittsburg autoists to the number of more than one hundred met last week and formed the Automobile Club of Pittsburg. Great enthusiasm prevailed, and the large number of charter members is indicative of the great progress the pastime has made in the Smoky City.

The organization meeting was held at the Hotel Dorset, with George H. Flinn in the chair. Little time was lost in clinching the suggestions of the committee on permanent organization, the members of which were Robert Pitcairn, jr., Robert King and Linford Smith. The following officers were elected:

President, George H. Flinn; first vice-president, J. F. Burke; second vice-president, W. C. Temple; third vice-president, D. H. Hostetter; secretary, Thomas B. Hartley; treasurer, Reuben Miller, jr.; the board of governors, Class I, their term expiring in one year, are Reade W. Bailey, W. L. Elkins and Dr. J. A. Hawkins; Class II, with term of two years, includes A. R. Neeb, Dr. H. W. Urling and George Hailman; Class III, term of three years, is composed of E. B. Byers, W. Linford Smith and B. W. Lewis.

Jarrott Will Challenge.

Whether Winton defeats Fournier or the fortunes of war are the other way, the winner will have his hands full if he wishes to accept the challenges that will be showered upon him. In addition to the American challenges already announced, Charles Jarrott, the Englishman who won the Ardennes race last year, has announced that he will shy his castor into the ring as soon as the contests are decided, and ask for a race with the winner.

Protection From the Elements.

The question of how best to protect the occupants of a car from the elements has received little attention from the manufacturers, who may perhaps excusably plead that they have been employed in more important work. Coachmakers, too, from whom something might have been expected, have been unable to divorce luxury from weight. Hence it is that many attempts at solution have been due to the ingenuity of private owners.

The mere addition of a brougham body to a car produces, as a rule, an intolerable horseless effect, and even worse is the adaptation of a hansom cab top—about as inappropriate a combination as could well be imagined. The solution is not so difficult if passengers alone are to be protected, leaving the driver exposed; but as most owners drive themselves, the real problem is to satisfactorily cover the front seats. The chief desiderata are: First a hood, capable of being half raised (to protect the back of the head in dusty weather, a point much appreciated by women), and, when raised, to be able to carry an open canopy as well as an entire covering (both being held on the lightest possible framework), and a front glass.

Here another point comes in—it must be of such a form as not to be easily obscured by snow and rain, and not too far from the driver's face. It has been suggested that a V shaped glazed frame, forming a "prow," would be far less liable to obscuration than a flat front glass, and could be more firmly attached. And if glass could be replaced by some lighter and less fragile substitute it would be all the better. Celluloid would probably be unsafe, but the non-inflammable material used in some substitutes for goggles, possibly an insoluble gelatine, would be just the thing. It would need, however, to be very cheap and easily replaced, as the surface would not be very durable.

About Steel Frames.

"The chassis embouti, or pressed steel frame, may be lighter, stronger and ultimately cheaper than the old form of frame construction. From the point of view of the manufacturer, the question then arises whether the time has come for the standardization of frames, in view of the fact that so many purchasers of cars wish to have widely differing varieties of bodies unsuitable for a single standard of frame. At any rate, for the present, standardization, like the alleged economy, is out of sight. From the point of view of the owner, there is the question of the sequel to accidents. Will the frame resist the fancy manœuvres of an inexperienced user? Neither type of frame will withstand such abuse, but while the broken portion of a built up frame can be repaired, the pressed steel frame has to be replaced as a complete whole. This replacement means the complete dissembling and subsequent reassembling of the car," says a well posted autoist.

Police Commissioners "Hit it up."

Thirty miles in two hours, and one stretch of three miles in the alleged time of four minutes, such was the way Police Commissioner Greene trampled on the speed law in Brooklyn Borough on Saturday last. In his "big French" automobile, he dashed from one police station to another on a tour of inspection. The eight mile an hour injunction was handled ruthlessly, especially in the outlying suburbs, such as Fort Hamilton, Bath Beach and Coney Island, and when he got through it was little more than a name except for the ordinary everyday automobilist, who oversteps the limit at his peril. Strange to say, the Commissioner, who was accompanied by Deputy Commissioner Ebstein, was not molested by any of the vigilant officers encountered.

The stretches covered at the highest rate of speed were the Fort Hamilton Road and the Shore Road to Bath Beach, both of which are smooth, level and speed conducive. On them the automobile was "let out" and the inspection party proceeded at ful speed.

Rhode Islanders Eat and Elect.

In connection with the annual meeting of the Rhode Island Automobile Club, held at the Crown Hotel, Providence, R. I., last week, the club's second banquet took place and proved highly successful. President J. A. Chase of the club acted as toastmaster.

Officers to serve for the ensuing year were elected, as follows: President, Dr. Julian A. Chase; first vice-president, James E. Blake; treasurer, R. Lincoln Lippitt; secretary, Herbert H. Rice; assistant secretary, Benjamin B. Clark; board of officers, to serve until 1905, H. Anthony Dyer; to serve until 1906, Lowell Emerson and R. Lincoln Lippitt.

Secretary Rice's report showed the club to have a membership of 100, and eighty carriages owned. A brief review was made of the runs and smokers held by the club during the last year.

Treasurer Lippitt's statement showed the club to be in an excellent financial condition.

Good Roads at Chicago.

The committee in charge of the Good Roads Convention, which is to be held in Chicago on February 20 by the N. A. A. M., in conjunction with the Western show, has decided to issue invitations not only to those prominently identified with the good roads movement, but also to all the United States Senators and Representatives. The convention has received the sanction of the National Highway Commission, the National Good Roads Association and W. P. Brownlow, author of the $20,000,000 good roads bill now before Congress.

The board of governors of the National Highway Commission is made up of John Brisben Walker, Colonel A. A. Pope, General Roy Stone and John Jacob Astor. Colonel W. H. Moore, of St. Louis, is president of the National Goods Roads Association.

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FIFTY STROKES AND BORES

Summary of Motor Dimensions Giving Varying Horsepowers and an Interesting Average.

An interesting subject, and one much discussed in the aisles and booths of the Garden during the show, was the sizes of motors and their horsepower. Some of the low priced tonneau cars, with small horizontal motors, were ticketed with big horsepowers, and on some of the big cars having vertical motors only a comparatively low horsepower was announced.

The annexed tabulated statement of fifty (50) separate makes of cylinder-fired, gasolene motors, or complete cars, taken at the show, reveals a wide divergence in the horsepowers claimed. This is, it is fair to assume, largely due to the variations in revolutions per minute, and to the varying amount of compression, assuming the mixture to be the same in all cases and the close fit of the cylinders and piston rings. It is of course perfectly obvious to those familiar with the art that a multiple cylinder motor with a light flywheel having an almost constant tongue, must show a greater percentage of power per square inch of piston area than a single cylinder motor carrying a heavy flywheel to give it momentum during three-quarters of the operation, the motor only working one-quarter of the time.

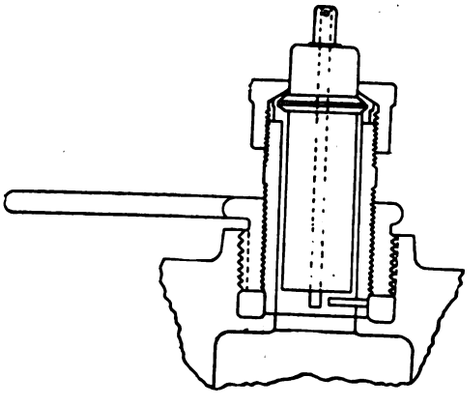
The comparisons are, nevertheless, of interest and value, and as an item of curiosity a composite motor made up from the figures develops a motor of 12 horsepower with 5 inch bore and 5 inch stroke and two cylinders:

Name.	Bore.	Str'ke	H. P.	Cyl'dr
Duryea	4½	4½	10	3
Arrow	4	4⅜	15	2
Rambler	5	6	6	1
Thomas	4¾	6	8	1
Spaulding	5	4½	25	2
Covert	4¼	3¾	5	1
Robinson	4 1-16	6	24	4
Searchmont	4½	5	10	2
Stevens-Duryea	4¾	4½	7	2
Apperson Brothers	5¾	6½	24	2
Oldsmobile	4½	6	5	1
Loomis	4½	4½	10	2
Packard	6	6½	12	1
Peerless	4½	5	16	2
Northern	4¾	6	5	1
Westfield	4½	5	16	4
General	4	4½	8	2
Fredonia	5½	6½	10	1
Autocar	3¾	4	10	2
U. S. Long Distance	5	6	12	2
Locomobile	4	5	16	4
Orient	4	4½	8	1
Crest	3⅛	3⅜	3½	1
Upton	4	4½	16	4
Toledo	4¼	5¼	18	3
Knox	5	8	8	1
Conrad	4½	4½	10	2
Haynes-Apperson	5	6	12	2
Columbia	5	5	24	4
Moyea	4	5½	16	4
Union Motor Truck Co.	8	5½	—	—
Cleveland	5	6	16	2
Yale	4½	4½	10½	2
Hoffman	5	6	7½	1
American C. G. V.	3¾	5⅛	15	4
Brazier	5	6	16	2
Wick	4½	6	28	4
Century	5	6	7	1
Shelby	6½	5	10	2
Franklin	3¼	3¼	10	4
Cadillac	5	5	6½	1
Whitney	4¾	6	6	1
F. B. Stearns & Co.	5¾	6¼	25	2
Buckmobile	4⅞	4¾	10	2
Matheson	3⅞	4½	25	4
Country Club Car	5	5	10	2
Hall	6	6	30	2
Backus	5½	8	12	1
Elmore (2 Cycle)	4	4	6	2
Kensington	4	4¾	12	2

It is worthy of remark that some of those attending booths were ignorant of the stroke and bore of their motors, while a smaller number declined to give the information.

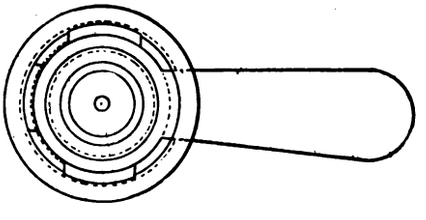
Making Valves and Plugs Accessible.

One of the most commented on features in the Madison Square Garden show were the hand removable valves and spark plugs of the Columbia gasolene cars. Accessibility could be carried no further than has been done with them. No wrench or tool of any kind is needed to enable the operator to take out either of the valves or any of the



spark plugs, examine, clean and return them. It is all done in an instant, and no one who has labored over the regulation plug and valves can fail to appreciate the improvement that has been made. The illustration shows the construction of the spark plug, which is operated in this manner:

Holding the plug in the hand with the wrench arm in a vertical position, insert the threaded end of the plug into the hole in the cylinder provided to receive it, until the shoulder of the plug is fair against the shoulder in the cylinder. Then turn the wrench arm to the right (which will engage



the threads of the spark plug with those in the cylinder casting), continuing the motion of the wrench arm to the right until the spark plug is as tight as it would be screwed up in case an ordinary thread was used. The idea of the plug is to provide a thread which is exactly the same as would be the case if a continuous thread was used. The idea of cutting away the thread on the plug and in the cylinder is to simply provide a means by which the spark plug may be inserted until the shoulders engage by a forward motion of the hand and tighten in place by a rotary motion, which, in any case, will not exceed 50 or 55 degrees.

FLOUTS MECHANICAL VALVES

Here's an American Maker who Stands for Automatic Intakes—French Going too Far?

Mechanically operated intake valves have their detractors as well as advocates. The former assert that they are neither new nor good. Their advantages are admitted, but drawbacks are pointed out and claimed to more than counterbalance the former. A well posted tradesman, writing to the Motor World, makes the following points against them:

"Generally where the sheep leads the herd will follow, so I suppose it is useless to try to stem the tide in favor of mechanically operated inlet valves. It would be a poor device that did not have some advantages, but more certain running at slow speed is certainly not one of them. To control the motor the charge is throttled lower and lower until the desired speed is reached, and if the throttle will not admit the charge no amount of opening an inlet valve will do so, so the advantages stated by you are unquestionably imaginary ones; but, since fashion knows no law except its own sweet will, they are probably as good as scientific reasons.

"As a matter of fact, motors run with automatic valves much higher than is good mechanical practice, and the automatic valve opens and closes more accurately at all speeds than any mechanically operated valve can possibly do. For all ordinary service, therefore, it is unquestionably better, but for the highest possible speed, such as in a racing machine, it is possible to make the mechanical valve do the best work, and this accounts for its adoption by some people. For those to whom the automobile is a racing toy, the mechanically operated valve should appeal, but to practical people wishing a carriage for every day use it should possess no beauty.

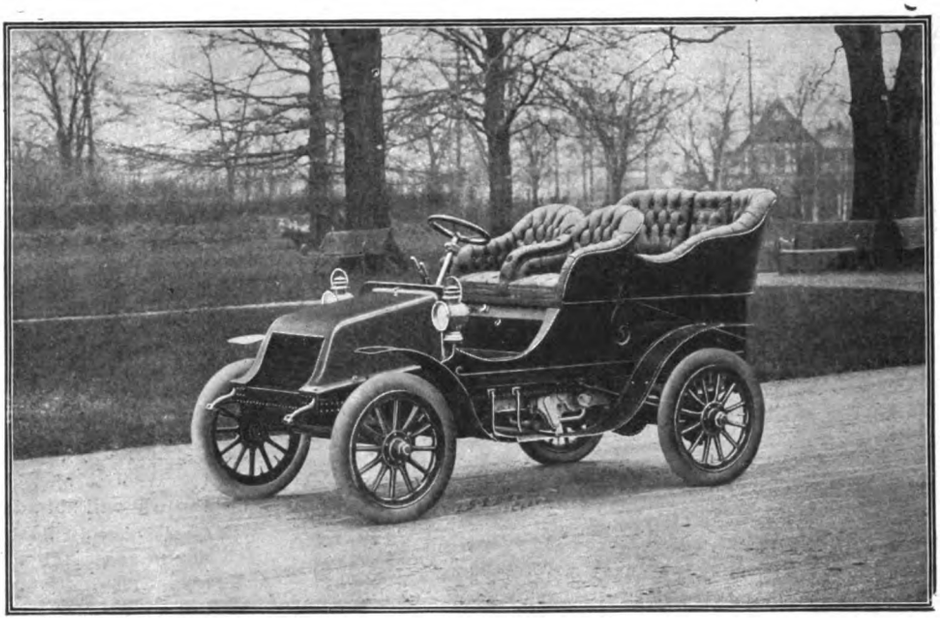
"However, farmers buy Norman draught horses for their own use and raise trotters to take prizes at the county fairs. Bicycle makers built racing machines for their models, and sold them to people to use on the road. They had such small tires, stiff frames, harsh pedals and high gear that there was no fun in riding. Automobile makers in France followed the racing game until a restriction became necessary, which was placed by limiting the weight. They are succeeding in spite of this limitation in going far beyond the practical, and good sense will unquestionably demand a further limitation in the near future."

New Firm in Boston.

Boston's newest retail automobile firm is Drisko, Snow & Ross, incorporated, No. 43 Columbus avenue. They have become New England agents for the American and Reber cars, made by the American Motor Carriage Co., Cleveland, Ohio, and the Reber Mfg. Co., Reading, Pa., respectively.

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$2,500



WILL YOU

pay two thousand, five hundred dollars for a genuinely good automobile which represents the present highest standard of excellence in design and manufacture?

If you do not appreciate the vital difference between superficial perfection and construction that is honestly good and thoroughly scientific from wrist-pins clear out to the last coat of finishing varnish, then you will not be especially attracted by the new twenty horse-power

WINTON TOURING CAR

We hope, however, that you will recognize our latest successful efforts and accord this new model the consideration it deserves. You who have been conscious of the rapid development of the successful American automobile, who have watched it through its various stages since the time—years ago—when Mr. Alexander Winton ran upon the roads his first "horseless carriage," will recognize the great strides we have made toward the goal of perfection in automobile building, and can appreciate in no small sense the genuine pride we feel in this latest triumph.

It is not intended as a "sensation." It does not incorporate a vast number of rare features for which we, in justice, can claim no more than theoretical excellence. Its construction does not embody a vast number of untried experiments, and we do not, therefore, ask anyone to share in a manufacturer's gamble. In presenting this model we give the very essence of practical and thoroughly tried out experience.

Consider the matter of delivery: During the current season we will be able to manufacture just one thousand of these twenty horse-power Winton Touring Cars. A liberal percentage of the total output has already been sold. Supply will not meet the demand, of this we are quite sure. Would it, therefore, not be an act of wisdom to file your order early and allow some one else to be disappointed as the result of procrastination?

THE WINTON MOTOR CARRIAGE CO. FACTORY AND GENERAL OFFICES

CLEVELAND, U.S.A.

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HORIZONTAL VS. VERTICAL

Some Stern Truths Regarding the Much Discussed Subject of Motor Position.

"There is a tendency in some quarters to speak as though the horizontal engine for motor cars was a thing of the past, and that anybody using such an engine was hopelessly out of date. Others in discussing the question recognize the fact that it is largely one of fashion which has brought the vertical engine into such prominence; but very few recollect that the very fact of the predominance of the vertical engine has resulted, with a few exceptions, in the great proportion of the latest improvements being embodied in it instead of in horizontal engines, as many of the makers of the latter type have, when redesigning their patterns, decided to follow the stream and to make vertical engines," says the Autocar.

"Consequently all their improvements have been embodied in the upright pattern, and the new car has been a great advance on the old one. This has been attributed to the position of the engine instead of to the higher power and numerous detail improvements which might just as well have been introduced into a horizontal motor had the makers deemed it advisable. Besides this, the transmission—in fact, every part of the car—is improved, but often the vertical engine gets all the credit.

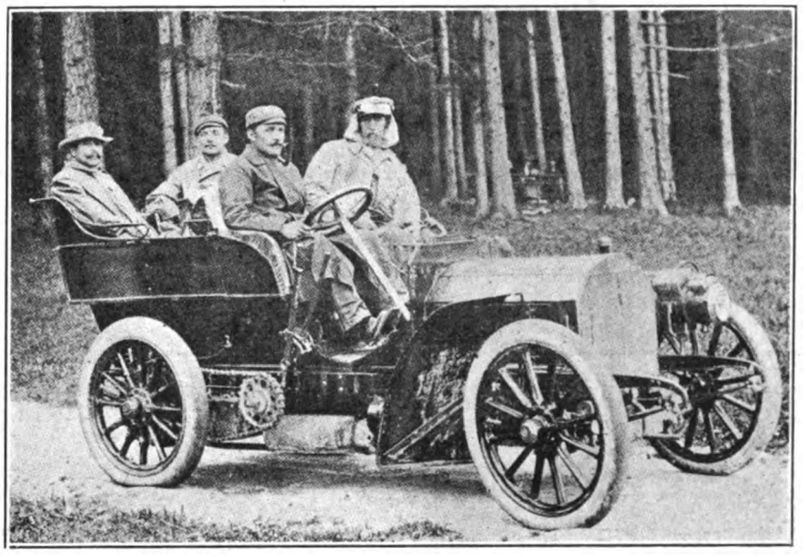
"It should be clearly understood at the moment that we are not proposing to discuss the merits of the two types, but merely to point out that the present wide use of the vertical engine is due to a very general following of certain prominent makers rather than to any special virtues possessed by it and not equally enjoyed by the horizontal type, as the two objections which are nearly always raised against the horizontal motor do not hold good if the engine is properly designed. We mean to say the majority of those who condemn the type assert that it is inaccessible, and that there is difficulty with the lubrication. These are objections which need not weigh for an instant, as there is no good reason why a horizontal engine should be inaccessible, and lubrication certainly gives no trouble with a properly designed engine, whether it is horizontal or in any other position.

"As this is the case, we take this opportunity of recording our opinion that the horizontal engine is a very long way from falling out of use for automobile propulsion. In fact, at the present time we know of a new and very promising type of vehicle which is being designed with a horizontal enegine, and that by a very experienced engineer who has designed more than one of the most successful vertical engines in use. We believe that there is room for both patterns, and that the predominance of one or the other will be largely a matter of fashion at the moment, although, of course, it will depend on developments and improvements which may be more applicable to one pattern or the other.

"Again, suppose a year or two hence the Gordon-Bennett and one or two other important races were to be won by cars fitted with horizontal engines, many who now condemn the type would be surprised to find how many hidden virtues there were in the horizontal engine after all."

America's Cup Delegate Abroad.

One of the keenest automobilists to be found anywhere is Clarence Grey Dinsmore, who has just been selected by the Automobile Club of America to represent it in Paris in connection with the Bennett Cup race. Being an American permanently residing in Paris, he is particularly well fitted for the post.



It will be recalled that last summer Mr. Dinsmore bore off the honors in what is known as the Semmering run in Austria. He also won the Austrian Automobile Challenge Cup last fall, awarded for the fastest time made in all classes. Mr. Dinsmore uses a 40 horsepower Mercedes car, and the illustration depicts him in this, with Robert Katzenstein, a Frankfort banker, in the tonneau. The chauffeur, Werner, who in 1901 won the race from Nice to Salon and return, occupies the front seat with the owner of the car.

That Sweet-Scented Marquis.

If reports be true, the Marquis of Anglesea is a most picturesque peer. The story current a little time ago, viz., that he used scented gasolene in his automobile, appears to be the truth, but not the whole truth. It is now stated, with the gravity that is meet, that when Lord Anglesea drives the scent distributing car he has his hair tied up with ribbon to match the particular scent distributed on the day—violet, rose or primrose, as the case may be.

AUTOMOBILIST GETS DAMAGES

Sues a Connecticut City for Accident due to Bad Streets and Wins—Court's Comment.

An important ruling fixing the responsibility for accidents arising from imperfect streets was made by Judge Roraback in the Superior Court at New Haven, Conn., last week. Damages in the sum of $400 were awarded George Lavigne, who had brought suit against the city.

It appears that while he was running an automobile at the corner of Howe and Chapel streets, it was swerved from its course by reason of a hole in the pavement between the trolley tracks, and struck a tree. Lavigne was thrown out and injured. The hole in question was four feet long, seven inches wide and four inches deep.

Judge Roraback found that, while under a State law the railroad is responsible for the condition of the pavement between and near to its rails, the statutes do not release the city from the statutory liability to the traveller, but simply make the railway company also liable to him, or answerable to the city when compelled to pay. The municipality is primarily liable, although an injured party may proceed against it or the railway corporation.

For Mail Service in Switzerland.

Along with its excellent roads, Switzerland has many exceedingly steep gradients, up which horse drawn vehicles are taken with difficulty.

The ubiquitous automobile, however, promises to change all this. The mountain republic is destined to become, it is asserted, the land of automobiles. In three years it is expected that every horse connected with the coaching and mail services will have disappeared. In the coming spring the first steps will be taken in bringing about this great change.

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Motor Wagons in Indianapolis.

How much of it is due to the fact that Indianapolis has a number of automobile manufacturing concerns is not easy to say, but certainly the Hoosier city is partial to the mechanically propelled vehicle. Furthermore their use is said to be extending very rapidly.

Although there are many vehicles used solely for pleasure, it is the utilitarian aspect of the matter that is attracting the greatest attention. Physicians have a decided partiality for the electric carriage, it being estimated that nearly 50 per cent of those used are in the service of medical men. Dr. Henry Jameson was the first to adopt the automobile, more than two years ago. He grew enthusiastic at once. Since then many men of his profession have followed his example.

Around the Newton Claypool Building, where "Doctors' Row" has been transferred, there is a string of automobiles at all hours of the day.

At the present time, however, it is the delivery wagon that is attracting the most attention. Merchants have not been slow to take advantage of the delivery facilities offered by the automobile. The New York store, Ayres's, Rink's, Deschler's cigar store, Coffy, the tea merchant; Flauner & Buchanan, undertakers; the Indianapolis Dress Pleating Co., Merritt's woollen mills and many others all use motor driven delivery wagons now.

Several of them are considering increasing their automobile service, and it is probable that many new wagons bearing some of the same names will appear on the streets within a short time.

"Almost to a man the merchants that have used automobiles for their delivery wagons would never think of returning to horses," a local tradesman is quoted as saying. "Those that still use horses are thinking of relegating them to the barn and using autos altogether. Automobiles are more economical in the long run—they are surer, quicker and more advantageous in many ways."

The concern that uses more automobiles than any other in Indianapolis is the Frank Bird Transfer Co. It is now running eight hansom cabs, two broughams are in Chicago awaiting orders to be delivered, and the company is considering the advisability of doing away with its horse coach service altogether.

Palmer a Sweet President.

A lively row broke out in the Chicago Automobile Club when its president, Honore Palmer, alderman and society leader, introduced an ordinance before the city fathers requiring all automobiles to carry white numbers four inches high on a black background, under a penalty of a fine of from $5 to $25. The club bitterly opposed the ordinance, and Alderman Palmer sent in his resignation as president of the club, which was promptly accepted.

Something About the German Cup-Lifters.

In a talk on the coming season's racing, the terrific speeds that will be seen were touched on by Baron Henri de Rothschild, the famous French autoist.

He had been shown the new 40 horsepower vehicle in course of construction by M. Serpollet, which had been tried, and which had travelled at a speed of ninety-two miles an hour. On the Promenade des Anglais at Nice M. Serpollet hoped to achieve a rate of progress equal to one hundred miles an hour.

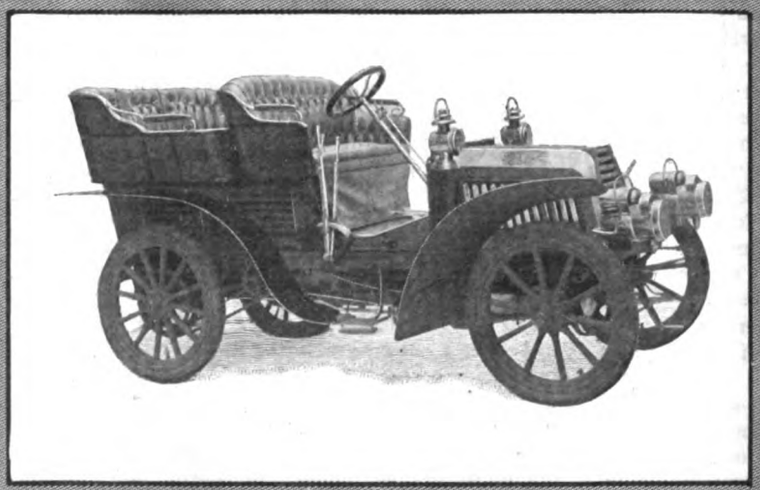
With regard to vehicles propelled by combustion engines, he had just returned from Stuttgart, where he had been shown the new engines constructed for the Gordon Bennett cars. They were of 100 horsepower, and would be fitted to vehicles which would be very terrible instruments to look at. The cars would be over ten feet long, the driver would sit above and in rear of the back axle, and the inclination of the steering pillar was such that the steering wheel was quite vertical.

These vehicles were expected to travel at a speed of one hundred miles an hour; but he had discussed the question of the conduct of a fast car at speed with his friend the Chevalier René de Knyff—the finest and most courageous driver in the world—and it was his opinion that the limit of human control was reached, or very nearly reached, at a speed of ninety-eight miles an hour.

THE BERG CHASSIS

8 And 15 H. P.

Under reigning conditions in this country, no matter how much money may be spent for a vehicle, it is invariably known as the product of the factory rather than the property of the owner.



As a remedy we propose that customers confine their dealings with us to the purchase of the chassis, and consult with expert carriage makers concerning body design, upholstery, furnishings, etc.

Our pattern book enables customers to choose from hundreds of original body designs, amazing to those who fancy that in the vehicles seen to-day the possibilities of design are exhausted.

THE BERG AUTOMOBILE COMPANY, 100 BROADWAY, N. Y. CITY

FACTORY—CLEVELAND, OHIO

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OIL-DEFYING SPARK PLUGS

Electrical Eccentricity That Serves Many Good Ends—How it may be Employed.

For about a year past the workmen whose duty it is to test the engines in the Panhard & Levassor works have been in the habit of arranging the high tension wires which are usually attached to the ends of the sparking plugs in such a way as to set the end of the wire about one or two millimetres from, but not attached to, the outer end of the conductor wire of the plug. The men found that this arrangement afforded them two advantages. In the first place, they are able to see if the current is passing properly to the plug; and, in the second, they benefit by the interesting and hitherto unexplained fact that when the current passes to the plug, as already explained, the spark jumps the interval between the platinum points within the cylinder, however much the same may be covered with oil. As new motors under test are, for obvious reasons, very liberally lubricated, this strange freak on the part of the electric current saves the testers much delay and annoyance.

It was quite by chance that the above little electric eccentricity was discovered. Messrs. Panhard and Levassor conceived the idea of protecting the exposed ends of sparking plugs by an ebonite cap A (fig. 1). In the under dome of the cap was fitted a metallic boss B, the cap itself being attached to the sparking plug as shown. A light copper spring connected the boss B with the end of the plug for the conduct of the current. One day, upon taking off one of these ebonite caps it was found that the copper spring conductor was absent between C and D, but, notwithstanding the cylinder to which the apparently faulty plug was fitted, fired perfectly. This was not particularly remarked at the time, as the spark given off by the coil at atmospheric pressure was something like fifteen millimetres in length, and the distance it was required to leap by the absence of the conducting spring was not more than three millimetres. But what did astonish was the fact that no matter how much the particular sparking plug served by this apparently faulty connection was drowned in oil, it sparked as well as if not better, than ever.

In "La Locomotion" M. Baudry de Saunier relates how this curious feature was demonstrated to him at the time by a complete connection being made to the oil soaked plug, when it altogether failed to spark, but recommenced to do so merrily when the connection was again interrupted in the manner that is indicated, and the spark obliged to jump once more within the ebonite cap.

We leave, says M. Baudry de Saunier, the explanation of this phenomenon to the profound electricians, and he goes on to show his readers how they may adapt their plugs to permit of the oil defying jumping spark. Reference to figure 2 will demonstrate this; E is a shaped collar made in ebonite, or better in some substance which is at one and the same time a non-conductor of both heat and electricity. This collar is screwed on to the plug as shown. It carries on its little projecting arms a small copper angle piece drilled and tapped for the attachment by a screw C and lock nuts of the secondary wire. The end of the screw is made to approach the end of the plug wire within one or two millimetres. To arrive at the sparking points on the cylinder end of the plug the current is obliged to leap the little gap of one or two millimetres which exists between C and D. This mounting of the plug, says M. de Saunier in conclusion, not only increases the power of the engine, but, as has already been stated, causes the plug to spark properly within malgré any amount of overlubrication of the cylinder.

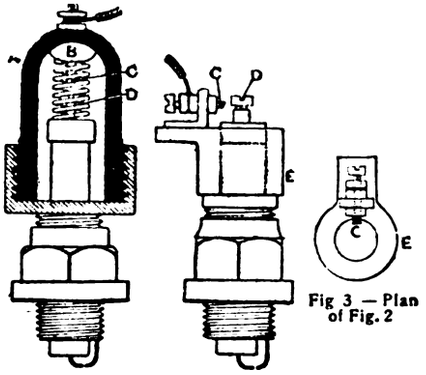


Fig. 1. Fig. 2

Fig 3 — Plan of Fig. 2

Figure 1—A, vulcanite cap; B, contact boss; C and D, metallic points between plug and B.

Figure 2—C, screw part of terminal; D, head of insulated pin in the plug; E, vulcanite collar.

Excursion Rates to the Chicago Show

An advantage which has not been heretofore enjoyed by exhibitors from Eastern States in connection with the automobile show, which opens in Chicago on February 14, is the opportunity of securing a special rate on the certificate plan from all Eastern points.

In connection with the show the Boston & Albany, New York Central & Hudson River and the Michigan Central railroads will sell excursion tickets commencing February 11 for continuous passage to Chicago. When purchasing tickets ask for a certificate to the "Good Roads Convention" and "Automobile Show" via Michigan Central, and pay full fare going. The certificate will return you to the starting point for one-third the regular rate.

Trains for Chicago leave Boston at 2 p. m., 4.15 p. m. and 6 p. m.; New York at 8.45 a. m., 1 p. m., 4 p. m., 6 p. m. and 12.10 a. m. Sleeping car reservation can be secured by addressing the passenger agent of any of the above lines.

H. B. SHATTUCK & SON,

BOSTON, MASS.

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A full line of standard French and Amorioan accessories carriod in stock.

STATE YOUR REQUIREMENTS. WE CAN MEET THEM, IF ANYBODY CAN.

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DATES CENTURIES BACK

Discovery of Petroleum Untraceable—What it is and how its By-Products are Obtained.

Petroleum was known in very remote ages, centuries before the Christian era, in fact. The Greek historian Herodotus speaks of it, as do the later Plutarch and the Roman Pliny.

Plutarch calls it naphtha, and the wonderful fires at Baku, which were merely ignited gas or oil fountains, were worshipped as things supernatural. Another famous historian—Marco Polo—mentions it in his book, and speaks of it rather as a medicine for camels afflicted with skin diseases than as a combustible material.

Various references can be found in later but still ancient works, which form satisfactory evidence that petroleum was well known many centuries before it became at all largely used. It was a thing to wonder at even as late as the middle of the eighteenth century. To-day the supply is enormous and the wells appear almost inexhaustible.

As it proceeds from the well crude petroleum consists of a mixture of gases, easily volatile liquids, heavier liquids such as ordinary paraffin, and, dissolved in this mixture, solid material like paraffin wax. All these substances are chemically related to one another, and are made up of the elements carbon and hydrogen. The difference between the gaseous portion of crude petroleum and the liquid or solid portions is simply that in the molecules or smallest possible portion of the substance, the gas will have a comparatively small number of atoms joined together, and the liquid and solid portions will have considerably more.

It has been long agreed that crude petroleum is a mixture of what is known as the paraffin series of hydrocarbons. The number of carbon and hydrogen atoms varies in the different substances, but it is a recognized fact that in all the members of the paraffin series there are twice as many plus two hydrogen atoms as there are of carbon. To make it clearer, if there be twenty carbon atoms, there are forty-two hydrogen atoms. For instance, in the very simplest constituent of petroleum—marsh gas—there is one atom of carbon and four atoms of hydrogen. Some of the solid portions of crude petroleum may contain in the molecule up to seventy atoms of carbon and 142 of hydrogen.

The chemical properties of the various petroleum products, of which "motor spirit" is one, are very similar. Their behavior under certain conditions is practically the same, except that they boil at different temperatures, the boiling point rising with the increase in the number of carbon atoms in the molecule.

The various products of crude petroleum are obtained by what is known as fractional distillation. If a certain oil be required for a particular purpose it is necessary to separate out from the crude petroleum just that portion which will exactly fulfil the conditions required. The crude petroleum is taken and, after a certain preliminary treatment, is distilled. The low boiling portions of the liquid are given off first, and so on until the heavier oils are reached and paraffin wax is left in the retort. The particular oil required is given off at a certain period in the course of distillation, and can be secured and so separated from the other products. To obtain a purer article still, this separated oil is distilled again, and it is partly to this fact that motorists must look for the reason why "motor spirit" is expensive in comparison with other crude petroleum products such as common benzolene. It is essential for motor purposes that the oil should have the correct specific gravity, and that it should evaporate at the right temperature and leave no residue.

The problem of the origin of crude petroleum is a most interesting one, and still awaits conclusive solution. One school of scientific thought holds that petroleum is the result of contact in the interior of the earth between water and molten metallic carbides. The water is supposed to percolate through the earth till it reaches the molten carbides, and to be formed into petroleum as the result of the reaction. This resembles the method by which acetylene gas is manufactured from calcium carbide with water. Another school of chemists holds that petroleum is the result of the decomposition of organic material. The fact that petroleum is found in almost all geological formations favors this theory, but this school of thought is divided against itself upon the question as to whether the organic material from which petroleum is said to be derived is of marine animal origin or of vegetable origin.

Whichever of these theories is correct, the conditions favorable for the natural storing of the oil seem to be the same whatever the quality and general surroundings. The oil is absorbed by porous rock which is protected by a covering of hard rock from oxidization and displacement by water. The cause of a "gush" of oil is variously explained. The weight of overlying strata is sometimes said to force the oil up through the well, or this may be effected by the pressure of accumulated gases or by water pressure. The pressure in either case must be enormous. The oil is sometimes flung to a tremendous height, and the pressure is maintained for a lengthened period. A recent "gusher" in Texas, for instance, was said to have a capacity of 200,000 gallons of oil a day, and a still greater stream is recorded of two of the Baku fountains, which each flung into the air with tremendous force nearly 30,000,000 gallons of oil in a month. It is needless to enlarge upon such facts as these to show the extent of the pressure which is exerted from some cause around the petroleum deposit.

As a source of energy petroleum would appear to have a great future before it, and yet it is not certain that the supply of petroleum is inexhaustible. The contingency of the supply failing must always be reckoned with. Especially is this the case as the origin of petroleum is an unsettled point; and consequently it is uncertain as to whether the supply of petroleum is or is not being continually replenished. Even a reduction in the amount of the present generous supply would make a difference in the price, and so affect the position of petroleum in the competition with other sources of energy such as coal and the power of wind and water. But apart from such a catastrophe it is safe to say that petroleum will always play a large part in the supply of mechanical energy for the world. It has many advantages over coal. It is readily portable, comparatively clean, efficient, and in many cases more economical; and if it should one day become rare, motorists will be able to fall back on alcohol as fuel for their engines, or—and this is perhaps more within the horizon of the probable—alcohol may supersede gasolene.

The "Joys" of Being Towed Home.

Can you imagine anything more woebegone than the appearance of an outfit that has become en panne, as the French say—that is, broken down, and has to be towed home? There is a dogged, resentful, look on the chauffeur's face, and a mournful, pathetic air about the vehicle that almost compels sympathy. In the interval of waiting for the rescuing vehicle a crowd gathers and asks a hundred and one questions more or less pointed. They range from dissertations on automobiling as a development of present day civilization to the merits and demerits of automobiles in general, and descend by natural graduations to the recalcitrant automobile in question. From speculation upon causes of trouble, they pass to direct questions as to what ails this particular car, and guesses as to when it will start up again.

When the welcome relieving car heaves in sight, and a stout rope is made fast to the convoy, the excitement increases and culminates when the two cars get slowly under way.

As they pick their way cautiously through crowded streets the contrast between the two operators is a singular one. The face of the first wears a smirk, and he seems to chuckle inwardly, although not too openly, seemingly mindful of his own liability to meet with such a mishap. The unfortunate chauffeur, however, attends strictly to business, guiding his car with circumspection and striving to keep the rope always tight. Should the other car have to slacken speed the brakes would be applied to the second to check its impetus also, and released in ample time to prevent its being started with a jerk.

When the garage is reached there is no gladder man than the chauffeur of the disabled car. Some of the blame for its going wrong seems to attach to him, and he feels it keenly, even when it is not his fault.

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MAYOR WON'T SIGN

Trenton's Executive Vetoes an Anti-Automobile Ordinance and Give his Reasons.

In returning without his approval an automobile ordinance passed by the Trenton (N. J.) Common Council, Mayor Katzenbach commented on the unsatisfactory character of the present wheeled vehicle law of the State.

"On April 9, 1902, there was approved an act entitled 'An act to regulate the use of wagons, carriages and similar vehicles, and to require uniformity of ordinances affecting the same,' which was designed to give authority to cities and other municipalities to regulate the use of automobiles, although the word 'automobile' does not appear in the act. This act was modelled after an act passed in the year 1896 (P. L. 1896, p. 21) to regulate the use of bicycles, but, unfortunately, does not deal with the subject of regulating the use of automobiles as fully as the act of 1896 did with the use of bicycles. Indeed, the act of 1902 leaves much to be desired and omits many matters which would seem essential to the proper regulation of the use of automobiles." He said:

"However, it is clear that it is the intention of this act of 1902 to secure uniformity in ordinances of the character of the one you have passed, and, therefore, so far as the act of 1902 goes, your ordinance will have to conform to its provisions in order to be valid."

He goes on to point out wherein the ordinance is inconsistent with this law:

"Since there is no provision in the act of 1902 regarding the speed limit, and there is no express power conferred by the charter to deal with this subject, the inquiry is naturally suggested as to whether this subject can be regulated by ordinance, or, if regulated, so dealt with as to make a speed regulation which will affect automobiles only and not the rate of speed of carriages and other vehicles using the public highways. I leave these questions for your future consideration," he concludes.

It is probable that the incoming legislature will be asked to pass a bill regulating automobile traffic.

Tale of Two Philadelphians.

The following story is told by two automobilists who were driving from New York to Philadelphia. In a town near Philadelphia they were stopped by a police officer and charged with the customary crime. They offered to drive him to the police station, where their names might be taken and the charge be formally made. When he was on board they set off at high speed to a road house near Philadelphia, and did not afford him a chance of dismounting in the mean time.

He was somewhat confused by the unaccustomed speed, and on his arrival at the inn was invited to partake of an excellent dinner and overwhelmed with other attentions, which had the effect of still further confusing him. He was then driven back to his home town at a pace which his official capacity hardly approved, but which seemed to complete the psychological revolution begun by the first journey and continued by the festivities in which he took part at its close. Either Philadelphia scrapple or the rapid movement through the air removed all traces of the offence from the policeman's mind. Perhaps he was too much of a sportsman, or perhaps he was to some extent a consenting party, a thing that has been known to occur in other instances of abduction. In any case, nothing has been heard of the affair.

Modifying New Jersey's Measure.

Material modifications are likely to be made in the Scovel bill regulating automobile traffic, introduced in the New Jersey legislature last week, as exclusively noted in the Motor World.

Its introducer, Assemblyman Scovel, of Camden, appears to realize the imperfections of his measure. He said on Monday that he would modify his bill regulating the use of automobiles in the State so that it would not work any serious hardships on the automobilists.

The proposition to have a State board of examiners will be eliminated, he says, and the licenses to automobilists will be issued by the State Controller upon the applicant answering certain questions under oath. These questions will relate to the experience of the applicant. Upon taking out a license the automobilist will receive a number, which will be registered by the Controller.

In its original form the bill provided for a maximum speed of fifteen miles an hour, and for the institution of a State board of examiners, before which all automobilists must appear and apply for a license before being permitted to operate their cars. The disposition to concede something to the users of these cars is gratifying, but unless the bill is shorn of more obnoxious features than is indicated by the remarks of Assemblyman Scovel it will still be vigorously opposed.

Vanderbilt's Alibi.

Having disconcerted the prosecution by putting in an alibi, counsel for W. K. Vanderbilt, jr., succeeded in having postponed his client's trial for "scorching," which came up this week at Paris. The alleged offence was committed last summer, when the millionaire-autoist was in this country. Nevertheless, he was sentenced in default. He took an appeal, and on the hearing his counsel stated that Mr. Vanderbilt never drove an automobile himself, and in this instance he was not even in the vehicle. This contention was supported by an affidavit by the Duke of Marlborough, and the judge postponed further hearing of the case to February 13 for further testimony.

COCKS BOBS UP

He Inspires Long Island Farmers' Club to Define Their Ideas of Automobile Legislation.

Farmers and—well, the others who are members of the Long Island Farmers' Club—have wrestled with the question of having some new legislation at Albany to further restrict the use of the automobile, and after wrestling with it have turned the whole matter over to former State Senator Cocks, the father of the notorious Cocks law. Mr. Cocks was recently defeated at the polls, but according to the news from Mineola, L. I., where the Farmers' Club met recently, he is still hunting for automobilists' scalps.

The discussion resulted in the adoption of a resolution referring the whole subject to the wisdom and discretion of ex-Senator Cocks, with the views of the club as to what should be done embodied as follows:

"That the present law regulating the speed at which automobiles may be driven be not disturbed, but that additional statutes be enacted providing that all operators of automobiles be required to obtain a license; that a failure to comply with that part of the automobile law—chapter 531, of the laws of 1901—referring to the equipment of the machine and stopping on signal be made a misdemeanor, punishable by a fine or imprisonment, or both, and that numbers be substituted for initials, and that they be placed on the lamps as well as on the machine, and be in plain figures."

Lovely place, Long Island! Salubrious! Several insane asylums and cemeteries there not doing half the business to which they are entitled.

Case Against Du Puy Dropped.

After having been held under bonds for nearly seven months Harry W. Du Puy, of Allegheny, Pa., a Yale student, has had the case against him dropped. He was held accountable for the death at New Haven of Dr. Thorpe Munro, a civil engineer, who was riding a bicycle on June 19, 1902, when he ran into an automobile operated by Du Puy. Munro died several days later of the injuries he received. Prosecutor Williams said that in his own opinion and that of the court a jury would not have found Du Puy criminally responsible in the matter, the circumstances of the accident being considered.

Orange of the Right Sort.

Citizens of Orange, Mass., have signed a petition drawn up for presentation to the Senator and Representative in the legislature, praying them to vote against legislation adverse to the automobile, on the ground that it would be in effect a blow at the town industry.

Evidently there is no desire on the part of the Orangeites that automobiles, and especially Grout automobiles, should be injuriously affected by adverse legislation.

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EXPULSION OF THE EXHAUST

It and the Admission of Fresh Charges Depend Chiefly on Valve Efficiency.

The importance of as nearly as may be filling the cylinder and combustion chamber of an internal combustion motor with fresh explosive mixture of gas and air in proper proportions, and as nearly as may be completely emptying the space referred to of the products of combustion remaining from the previous discharge of power stroke, must be apparent to every student of motor design and construction.

A very small contamination or adulteration of the new charge of gas by the residue of the last charge may be of little moment, provided it be confined to this same very small adulteration, but actual experience tends to prove that any individual engine, as designed by its makers, will not for long continue to exhaust its originally designed proportions of the useless products of combustion, but will from various causes gradually deteriorate in this respect, and so lessen the quantity of fresh explosive mixture presented to the ignition spark, with consequent weakening of the explosion and the engine power.

It is, of course, impossible by the mere direct action of the piston to expel all the remains of the burnt or partially burnt gases from the cylinder, as under existing conditions there must remain always a certain body of foul gas equivalent to the space of the combustion chamber, and, further, this residue must in all or most cases be under some degree of compression, so that the entry of fresh explosive mixture does not commence (under the present method of piston suction) until such pressure has been relieved, by which time the piston may have performed nearly half its suction stroke, particularly if the exhaust valve, either from false setting or wear, or any other cause, is subject to the fatal fault of closing somewhat too early.

Supposing, however, that in the original design as commonly employed, the workmanship has been such as to secure a minimum amount of loss from this cause, it then devolves on the user of the motor to maintain something like the original order of things and so secure the maximum explosive effect of which the particular design admits.

To do this there are some three or four points to be watched; first in importance is the suction power of the piston and the ready opening of the inlet valve; next is the proper closing of the exhaust valve, and these two conditions can be maintained only by frequent and careful inspection of the inlet valve spring, and the amount and direction of wear in the exhaust valve and the cam mechanism operating it; but any fault in either direction may—as a rule—be roughly diagonzed by the falling away in the degree of compression exhibited by the motor on turning the starting handle; or, in the case of the motor cycle, on pushing the machine along the ground and noting the resistance.

Irregular strength of inlet valve springs and indifferent timing of exhaust valve opening and closing may be blamed for the majority of troubles incidental to poor compression and poor explosive force of the mixture, for if the inlet valve spring be weak it opens readily enough when the back pressure is relieved and the piston sucker takes effect, but is somwhat tardy in closing, with consequent loss of a portion of the charge; if, on the other hand, the inlet spring is too strong, the valve fails to open until late in the piston's stroke, and so the charge is diminished.

Add to either of the above conditions an exhaust valve which opens too soon and closes too soon, you have a set of circumstances which entirely precludes the engine or motor from doing its best work, because in this case the bad inlet valve influence with its resulting poor charge and poor compression is aggravated by a too early release on the exhaust in the first instance and a back pressure on the piston when completing the exhaust stroke.

If, on the other hand, the exhaust valve both opens and closes too late, then there is, as a first result, a certain amount of back pressure on the ascending piston or on the exhaust stroke, followed by a loss of new mixture due to the lack of suction action of the piston where the exhaust still remains open after the piston has turned the dead centre.

The mechanically operated inlet valve, which is at present being exploited as a novelty in automotor construction, but which in stationary gas engine work has been quite common for a number of years, is the first practical step toward the elimination of the faults referred to, but although the positively operated inlet valve would appear to be likely to become general, and indeed must become so, it is highly probable that future developments will continue further in the same direction by causing a fixed quantity of explosive mixture to be injected or forced into the cylinder at every charging stroke.

In the Diesel system the engine compression deals only with pure air, the quantity of necessary gas being injected afterward to form the desired explosive, but it is not in this direction that future advances are likely to take place; it is more likely that the requisite explosive mixture in proper proportions of gas and air will be formed as at present, outside of the engine proper, and such mixture will be pumped or otherwise assisted to forcibly pass through the open inlet valve, and so fill the cylinder and combustion chamber to a greater extent that is at present practicable with ordinary suction or mere atmospheric pressure valves.

The subject of increasing the efficiency of the modern motor by providing a more complete and more uniform charging rate in combination with a more thorough exhaust and relief of all back pressure, is one of the questions of to-day, the solving of which will do much to increase the somewhat poor efficiency now shown.

Tested in the Desert.

The following letter from Cairo, Egypt, to "The Brooklyn Daily Eagle" is interesting, but would have been much more so if the correspondent had told what sort of a motor was used, and had given some description of the wagon:

"The Egyptian Government, seconded by the British motorist enthusiasts on the Cairo staff, has successfully completed a series of experiments in desert travelling by motor. A desert motor wagon, conveying forty soldiers at Abbassieh, spun down the Suez 'Road,' negotiating the rough passage in fine style. On getting into the desert the real trial began.

"Where the sand was fairly firm, good running was made. The wagon was fitted with tires having broad flanges, which gripped well and drove the machine onward. Where the sand was loose the going was difficult, the wheel occasionally churning sand without progressing. This fault will be removed by the use of broader tires.

"Hill climbing experiments were made in Cairo, and a wagon carrying a freight equal to three tons covered the great citadel hill in fourteen minutes without a stop. The representatives of the ministry and the army were well satisfied with the general efficiency of the wagon for transporting troops. Trial was also made of a desert transport wagon for camel, horse, mule or motor traction."

Taking Care of the Valves.

The admission and exhaust valve should work freely, and need very little attention. Through too free oiling or too rich a mixture they may become clogged with soot, when the valve should be removed and washed in gasolene. The spring should be freed, and the valve turned several times on its seat by means of a screwdriver, adding a drop of gasolene. Should the seating of the valve show a bright ring all round its circumference the valve and seat may be replaced, but if this bright ring does not show, the valve must be ground in with the finest emery flour and oil, and the whole carefully wiped clean and replaced.

Now Teaching the Children.

One of the primary schools of Paris furnishes regular instruction in the art of driving automobiles. Children of both sexes receive these instructions and take so much interest in them that the teachers are afraid some of their other studies will be neglected on account of them.

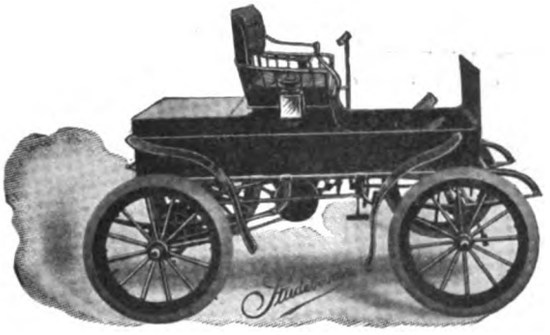
The correct manner of driving an automobile is clearly explained and all requisite information in regard to motors and the construction of the vehicle is also given. Exact models are used for this purpose, and a textbook is now being prepared for the use of children in other schools.

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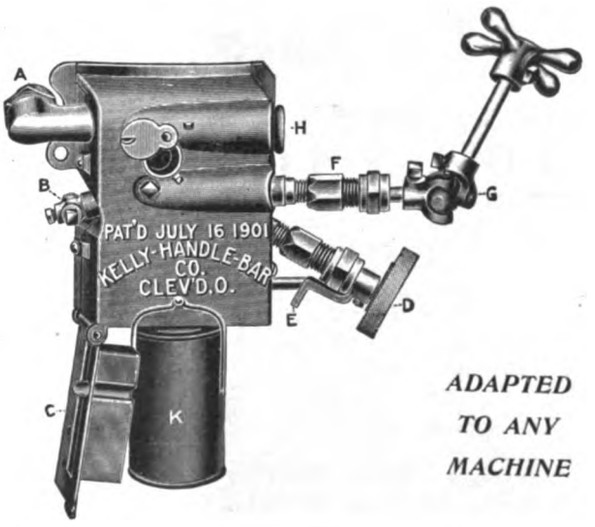
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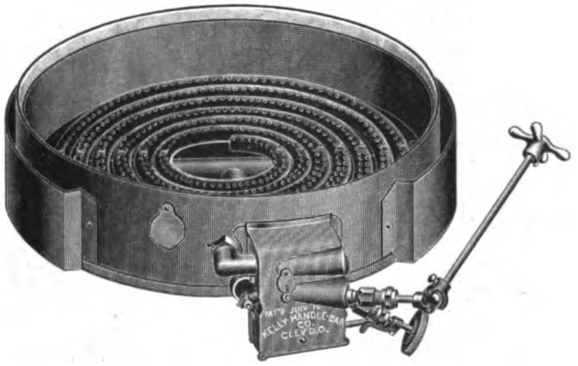
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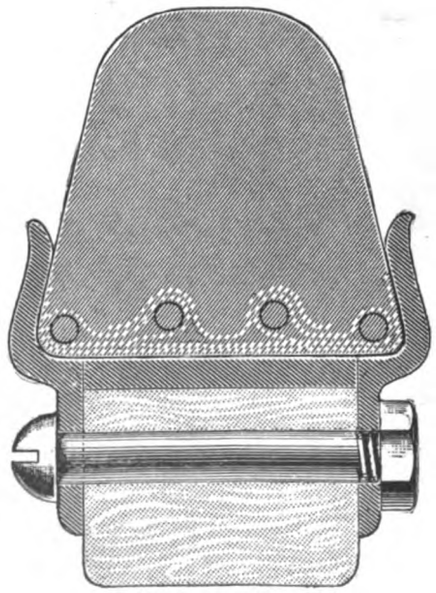
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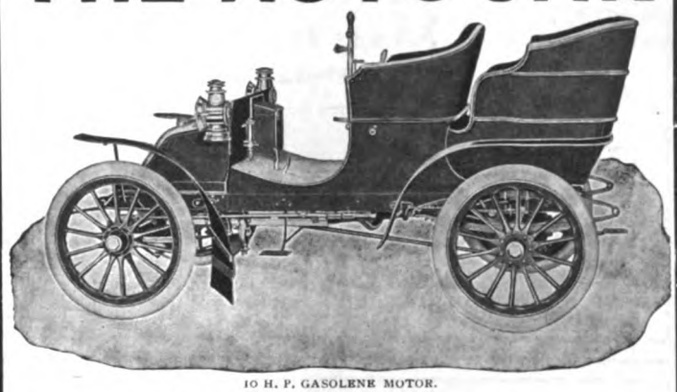
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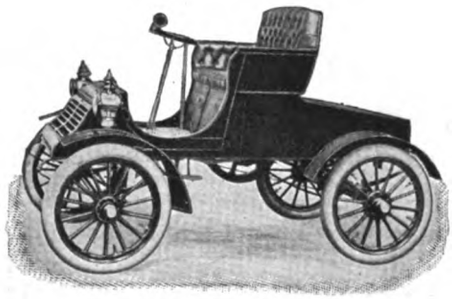
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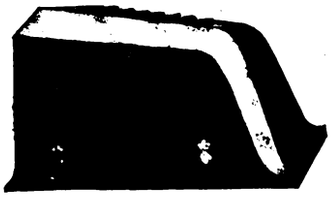
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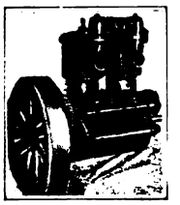


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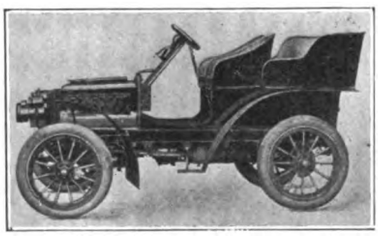
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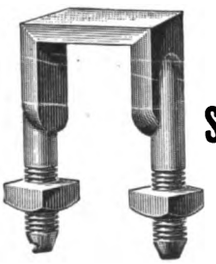


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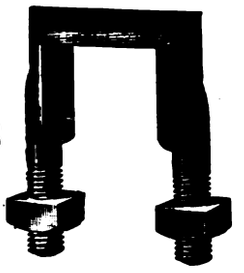
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The Week's Patents.

719,072. Spark Igniting Mechanism for Explosive Engines. Charles G. Annesley, Buffalo, N. Y., assignor to the Buffalo Gasolene Motor Co., Buffalo, N. Y., a corporation of New York. Filed September 13, 1901. Serial No. 75,274. (No model.)

Claim—1. In an explosive engine, the combination of a sparking device, a shaft having a cam adapted to actuate said sparking device, an outer sleeve adapted to be rotated directly by the engine, an interior adjusting sleeve to which the outer sleeve is splined, said adjusting sleeve turning with and adapted to be shifted in the outer sleeve, and a pin projecting from the shaft and adapted to enter an inclined slot in the walls of the interior sleeve, all arranged so that when the adjusting sleeve is shifted in the outer sleeve the shaft and cam secured thereto may be turned with respect to the adjusting and outer sleeves, whereby the relative position of the cam with respect to its coacting part for actuating the sparking device may be varied, substantially as and for the purpose set forth.

719,171. Steering Mechanism for Motor Vehicles. Herbert Austin, Erdington, near Birmingham, England. Filed April 23, 1902. Serial No. 104,411. (No model.)

Claim—1. In a steering mechanism for a motor car or vehicle, the combination with a steering spindle mounted to rotate axially in a part which is rigid with the framing of the vehicle, and the said part, of locking mechanism carried by the fixed axle of the vehicle, gearing operated by rotation of said spindle, adjustable connecting means between the said gearing and the locking means, whereby the latter is operated from the spindle, and means intermediate the steering wheels of the vehicle and said locking mechanism for operating said wheels.

719,179. Vehicle Tire. Frank P. Brining, Westgrove, Pa. Filed July 3, 1902. Serial No. 114,180. (No model.)

Claim—1. A felly having an annular groove formed in the same, a ring of soft rubber secured within said groove, undercut grooves formed in the walls of the groove, a rubber tire, bevelled edges or tongues formed upon the tire adapted to fit within the undercut grooves, an opening formed through the tire, a slit formed from the opening to the inward face of the tire, pins arranged at intervals in the tire and extending laterally across the slit, hooks extending through the felly and also through the soft rubber ring adapted to be hooked upon said pins, means for drawing said hooks toward the felly for the purpose of binding the tire to the felly, as and for the purpose specified.

719,199. Internal Combustion Engine. Charles E. Dawson, Hythe, England. Filed December 10, 1900. Serial No. 39,427. (No model.)

Claim—1. In an internal combustion engine of the two stroke cylinder type having an air displacer discharging into two reservoirs communicating with a chamber connected to the engine cylinder through openings situated above each other, a valve controlling the passage from the upper opening of the chamber, above a second valve controlling the passage from the lower opening to the engine cylinder, the upper valve having a hollow stem, and guiding the lower valve, substantially as described.

719,249. Explosive Engine. Bert Niles, Croswell, Mich. Filed April 20, 1901. Serial No. 56,782. (No model.)

Claim—1. In combination; a motor cylinder having a piston, a valve for controlling the admission of exploded gases under pressure to said cylinder, a reservoir for storing such gas, an ignition chamber connected with the reservoir and provided with a piston, a rod connecting the pistons of the motor cylinder and ignition chamber, a cylinder head movable to close the end of the ignition chamber by the pressure of gas in the reservoir and movable to open position by the pressure of exploded gases in the ignition chamber, a compression cylinder connected with the ignition chamber, and means under the control of the pressure of gas in the ignition chamber for igniting an explosive charge therein.

719,315. Storage Battery. Claude H. Everett, Atlanta, Ga. Filed July 8, 1901. Serial No. 67,464. (No model.)

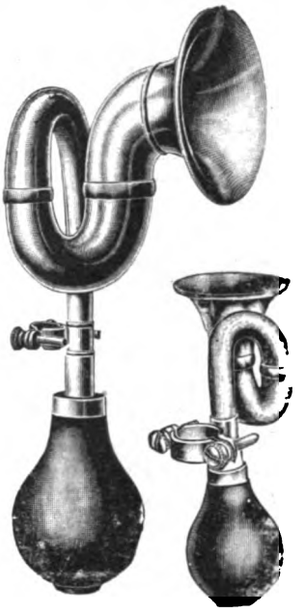
Claim—1. In a storage battery plate, the combination of a support, arms extending laterally therefrom, said arms being unconnected at their outer ends, and sheet metal strips mounted on said arms.

719,326. Cooling Means for Explosive Engines. Herman Gross, Lafayette, Ind. Filed November 14, 1902. Serial No. 131,411. (No model.)

Claim—1. The combination with the cylinder and piston of an explosive engine, of an auxiliary cylinder of larger diameter than the main cylinder, an annular flange carried by the piston and fitting within said auxiliary cylinder, a plurality of ribs arranged on the surface of the cylinder, a jacket surrounding the ribs to form a plurality of air passages, and radial ribs disposed on the head of the cylinder, there being an opening in the jacket for the passage of air, substantially as specified.

719,329. Vehicle Tire Fastener. Jacques C. Haines, Chicago, Ill., assignor of two-thirds to William E. Huber, and Chester Haines, Chicago, Ill. Filed May 19, 1902. Serial No. 107,918. (No model.)

Claim—The combination with a laterally divided rubber vehicle tire having a circumferential perforation, of a retaining wire therein joined at its ends, and a pair of separator, reinforcing bushings 6, surrounding the joint, each bushing comprising a sheet metal cylindrical structure of uniform size throughout its length, pivoted at one end with a laterally projecting flange adapted to bear against one of the severed ends of the tire, and also provided with a series of longitudinally extended perforations spaced throughout its length and adapted to receive protruding portions of the surrounding tire, substantially as set forth.



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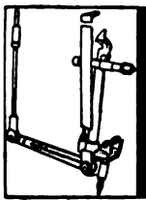


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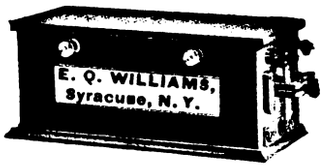
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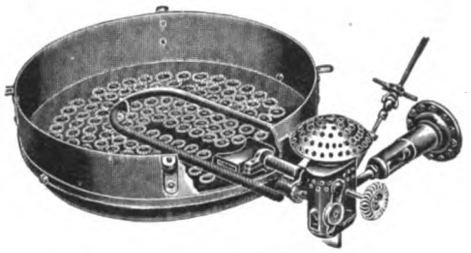
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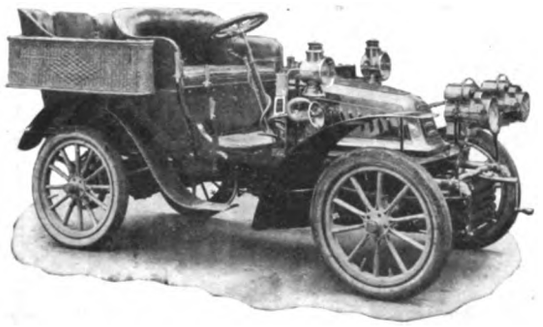
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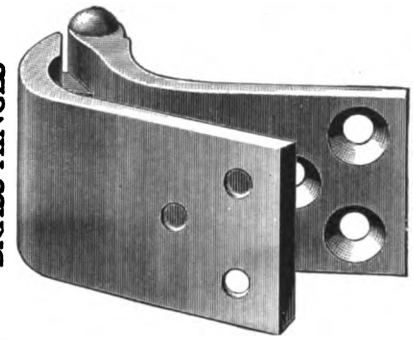
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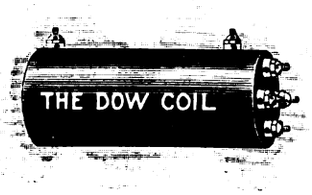
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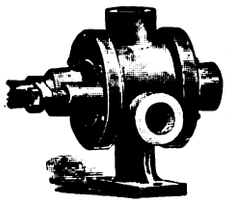


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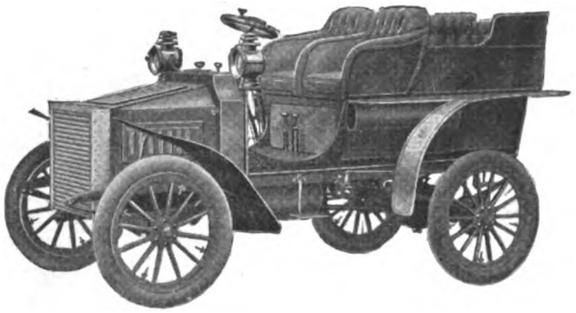
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BALTIMORE, Continental Trust Building.
SAN FRANCISCO, Nevada Block.
BOSTON, 60 State St.
CLEVELAND, New England Building.
DETROIT, Michigan El. Co., 101 Woodward Ave.
HAVANA, CUBA, G. F. Greenwood Mgr., 34 Empedrado St.

RESULTS at the NEW YORK SHOW Prove the "YALE" MOTOR CAR a Success.

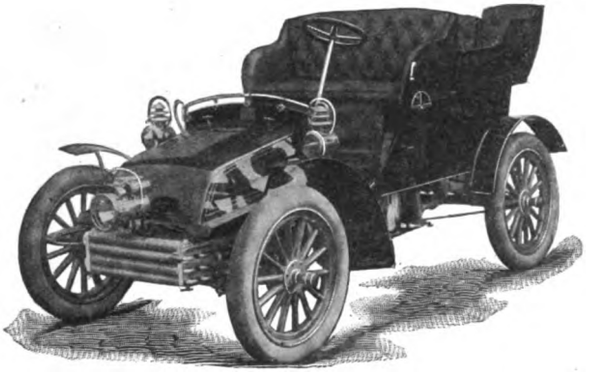
WE DEMONSTRATED TO ALL COMERS AND DID BUSINESS.

A RATIONAL VEHICLE,

AT A RATIONAL PRICE,

$1750.

NO VARIATIONS.



SIMPLICITY—
STRENGTH.

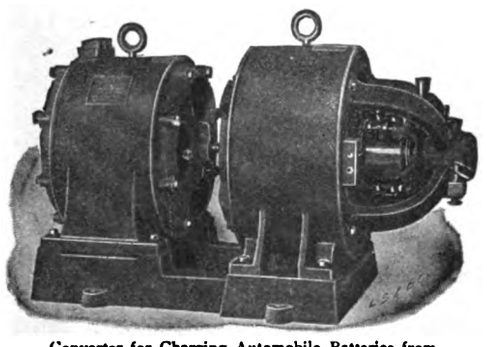
ELEGANCE IN DESIGN.

THOROUGHNESS IN WORKMANSHIP.

WE HAVE APPOINTED THE FOLLOWING AGENTS AND WILL CONSIDER A FEW MORE:

THE DU BOIS COMPANY, Ltd., London, England.
PARDEE & COMPANY, Chicago, Ills.
CENTAUR MOTOR VEHICLE COMPANY, Buffalo, N. Y.
W. E. METZGER, Detroit, Mich.
P. J. READ, Newtonville, Mass.
QUILLING BROTHERS, Cleveland, Ohio.
JAMES LUCEY Troy, N. Y.
HYSLOP BROTHERS, Toronto, Ontario.
N. W. CHURCH, Los Angeles, Cal.

THE KIRK MANUFACTURING COMPANY, Toledo, Ohio.



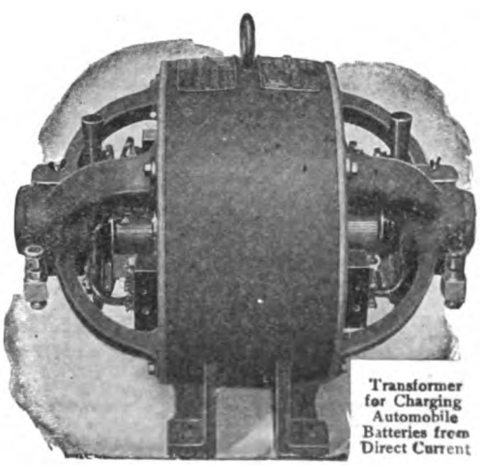
Convertor for Charging Automobile Batteries from Alternating Current.

WE ARE MANUFACTURERS OF THE

Standard Electric Motors

THAT ARE NOW USED ON ALL THE MOST SUCCESSFUL ELECTRIC AUTOMOBILES in the country.

Our machine is the **MOST EFFICIENT and PRACTICAL OF THEM ALL.**—as demonstrated by hundreds of them in daily use all over the country.



Transformer for Charging Automobile Batteries from Direct Current

THE ELWELL-PARKER ELECTRIC CO.,

CLEVELAND, OHIO.

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GOODRICH
Clincher Automobile Tires
Original American Clincher Leads.

There were more Goodrich Clincher Double Tube Automobile Tires fitted to machines on exhibition at Madison Square Garden Automobile Show Jan. 17-24, than any other individual make of Clincher Double Tube style of tire.

HERE IS THE RECORD.

Winton Motor Carriage Company	4 machines.
White Sewing Machine Company	5 "
Peerless Motor Car Company	4 "
Pan-American Motor Company	3 "
Pope-Robinson Company	3 "
The F. B. Stearns Company	1 "
Packard Motor Car Company	1 "
Smith & Mabley Company	3 "
Berg Automobile Company	2 "
The Walter Car Company	3 "
Franklin Mfg. Company	2 "
The Shelby Motor Car Company	2 "
American Motor Car Company	2 "
Hoffman Automobile & Mfg. Company	2 "
Fredonia Mfg. Company	2 "

U. S. Long Distance Automobile Company, Locomobile Company, Geo. N. Pierce Company, Spaulding Motor Car Company, H. P. Hall Motor Company, Moyea Automobile Company, one machine each.

Baker Motor Vehicle Company, 6 machines, ALL fitted with Palmer Special Speed Automobile Tires, OUR Make. Ajax Motor Company, 2 machines, fitted with Goodrich Single Tube Motor Tires.

RECAPITULATION.

Goodrich Clincher	Tires equipped	47 machines
Palmer Special,	" "	6 "
Goodrich Single Tube	" "	2 "
		55

TOTAL 55 MACHINES.

IMPORTANT.

With hardly an exception, all machines at show using our Clincher Tires, were Heavy Touring Cars of High Power and Speed, requiring Tires of exceptional strength and quality. That is why Goodrich Clinchers were made the Tire equipment. They have been thoroughly tested and their superior merits acknowledged. Write for booklet of testimonials. Mailed to any one upon application.

THE B. F. GOODRICH COMPANY,
FACTORIES, AKRON, OHIO.

Branches:

NEW YORK, 66-68 Reade Street.
CHICAGO, 141 Lake Street.
SAN FRANCISCO, 392 Mission Street.
BOSTON, 157 Summer Street.
BUFFALO, 9 West Huron Street.
PHILADELPHIA, 922 Arch Street.
DETROIT, 80 East Congress Street.
DENVER, 1444 Curtis Street.

LONDON, ENGLAND, 7 Snow Hill, E. C.

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The MOVEA
FOLLOWS NO STANDARD
BUT SETS ITS OWN AND SETS IT HIGH



MADE for the critical and for those to whom quality is the first consideration.

Truly a Triumph of American mechanical ability, incorporating the best foreign practice, with a refinement of detail and construction never before attempted.

If you would possess one of these superb cars, now is the time to speak.

Movea Automobile Co.

3-7 West 29th Street,

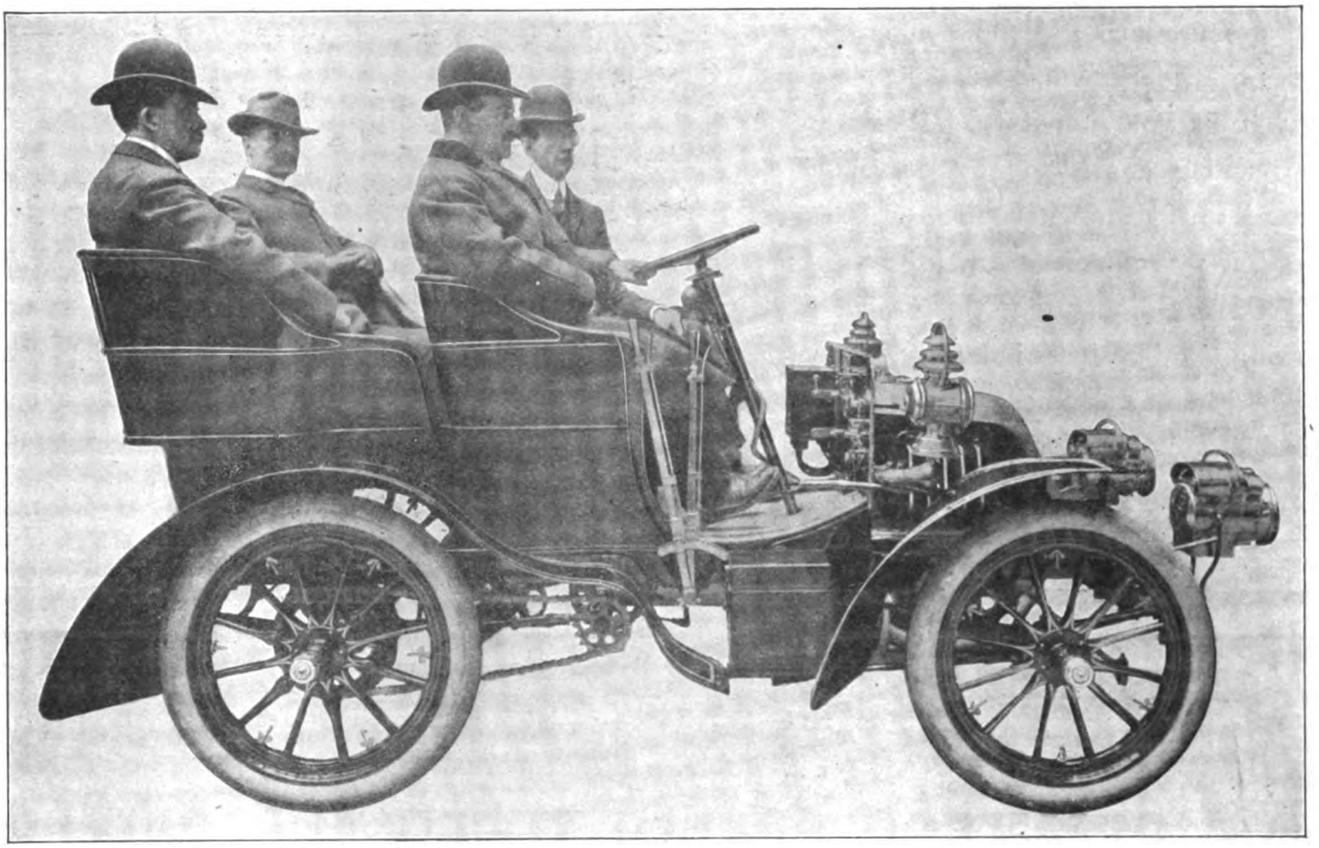
NEW YORK CITY.

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THE Locomobile COMPANY



The New 9 H. P. Gasolene Locomobile

THIS car has all the novel features of the 16 H. P. Locomobile, such as the Throttle on Steering Wheel; Valves easily removed and replaced; Kerosene Pump; Slide Gear Transmission; also the steel Chassis Construction which makes it possible to attach any desired style of body. Write for full description.

The Locomobile Company of America,

N.Y. SALESROOMS, Broadway, cor. 76th St. Factory, Bridgeport, Conn.

Branches in Chicago, Philadelphia, Boston, London and Paris.

THE Locomobile COMPANY

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An Open Letter to Automobile Dealers



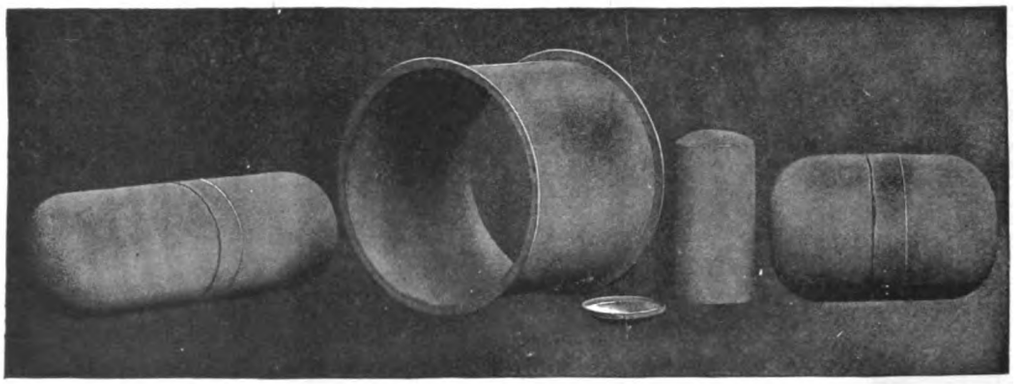
You are in the business to make money. Your profits depend upon Automobiles sold by you in your territory. Why confine your selling efforts to any one kind of power? All powers have their advantages. The Electric embodies many features of practical worth with a minimum of trouble. ***NATIONAL ELECTRICS*** represent that which is best in the Electric field. To add our line, you are only showing good business judgment. Electrics are going to sell. Why spend your time talking other powers when a customer wants a ***NATIONAL?*** The National agency will prove to be a most valuable asset and money maker. Think it over and write us about our prices, terms and catalogues.

National Motor Vehicle Co.

1400 E. 22 St.
INDIANAPOLIS, IND.

If you are interested in making all Automobiles Safe and Safe Automobiles Safer you must become interested in the

R-C SEAMLESS COPPER TUBES AND SHELLS



FOR BOILERS, MUFFLERS, AIR TANKS, GASOLENE TANKS.

THEIR SUPERIORITY OVER SOLDERED SHEET METAL IS EASILY DEMONSTRATED.

For Particulars address RANDOLPH-CLOWES CO., WATERBURY, CONN.

BRANCH OFFICES:

715 Postal Tel. Building, NEW YORK. **Cor. Oliver and Purchase Sts., BOSTON.** **602 Fisher Building, CHICAGO.**

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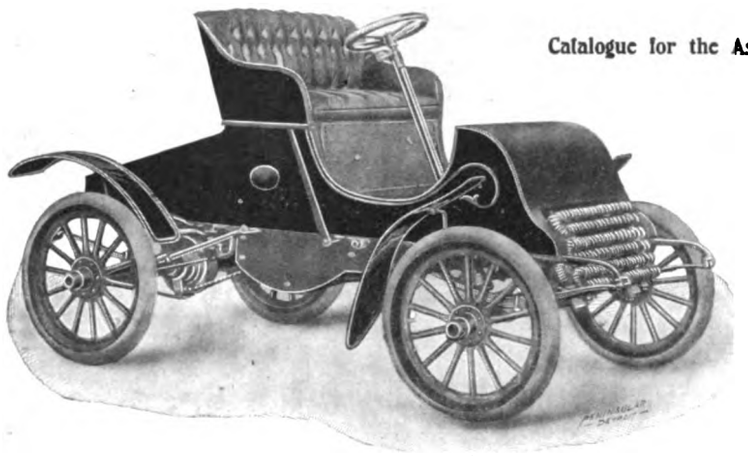
The CADILLAC

"It's just good all over"

$750.

With Tonneau, $850.

The Best Proposition for 1903.



Catalogue for the Asking.

THE FOLLOWING AGENCY LIST PROVES IT:

Cadillac Automobile Co. of Illinois, Chicago, Ill.
Cadillac Co. of New York, New York City.
John Wanamaker, Philadelphia, Pa.
William E. Metzger, Detroit, Mich.
Pence Automobile Co., Minneapolis, Minn.
Conrad Mueller Co., Indianapolis, Ind.
American Cycle Mfg. Co., Boston, Mass.
American Cycle Mfg. Co., Providence, R. I.
American Cycle Mfg. Co., Washington, D. C.
Cleveland Automobile & Supply Co., Cleveland, O.
Oscar S. Lear, Columbus, Ohio.
Centaur Motor Vehicle Co., Buffalo, N. Y.
Crescent Automobile Co., Jersey City, N. J.
New Jersey Automobile Co., Newark, N. J.
A. T. Wilson, Denver, Col.
R. V. Connerat, Savannah, Ga.
Michigan Automobile Co., Grand Rapids, Mich.
Houghton Implement Co., Grand Forks, N. D.
Peckham Carriage Co., Dayton, Ohio.
The Hanauer Automobile Co., Cincinnati, Ohio.
F. O. Bailey Carriage Co., Portland, Me.
Norman W. Church, Los Angeles, Cal.
R. W. Whipple, Binghamton, N. Y.
Theodore Jonas, Milwaukee, Wis.
Adolph A. Geisel, Springfield, Mass.
Birney A. Robinson, Worcester, Mass.
James Lucey, Albany nad Troy, N. Y.
Fred A. Mabbett & Co., Rochester, N. Y.
Irvin W. Dill Carriage Works, Harrisburg, Pa.
Brown, Thomson & Co., Hartford, Conn.
Charles E. Whitten, Lynn, Mass.
Murphy Bros., Erie, Pa.
Hyslop Bros., Toronto, Ont.
Elmira Arms Co., Elmira, N. Y.

WILLIAM E. METZGER,
Sales Manager.

CADILLAC AUTOMOBILE CO., Detroit, Mich.

The Feature of the Accessory Exhibits

AT THE

NEW YORK AUTOMOBILE SHOW

WAS EASILY THE

VEEDER TACHOMETER

It is placed on the dash directly in front of the driver and indicates at all times, in plain figures, the rate of speed per hour at which you are traveling. IT IS SIMPLE, DURABLE, AND ACCURATE.

Special attaching fixtures are necessary for different makes of automobiles and it requires time to make them. Better send for a descriptive circular and place your order promptly. Numerous orders have already been booked and all will be filled in their turn.

Makers of
Cyclometers, Odometers
Counters, Tachometers
and Fine Castings

THE VEEDER MFG. CO.,

HARTFORD, CONN.

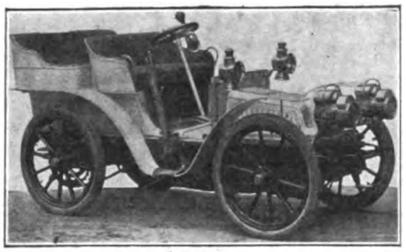
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FRENCH AND AMERICAN
AUTOMOBILES.

Agents for THE ELECTRIC VEHICLE CO.

AGENTS FOR
Paris Automobile Societe Anonyme
HENRY FOURNIER, MGR

11 & 18 H. P.
MORS
1903 Model
Attracted special attention
PARIS AUTO SHOW.

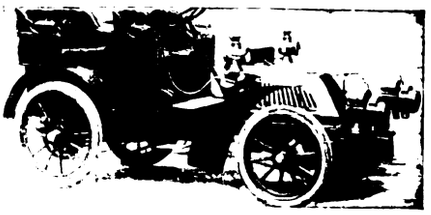


8 H. P. MORS.

REPAIRS.

THE CENTRAL Automobile Co.
1684 BROADWAY.
TELEPHONE: 2397 } Col. 2398 }

STORAGE.



10 H. P. PEUGEOT.

Prompt Deliveries of
8, 11, 18 H. P.
MORS

OPEN DAY AND NIGHT.

Prompt Deliveries of
RENAULT,
PEUGEOTS,
Mercedes.

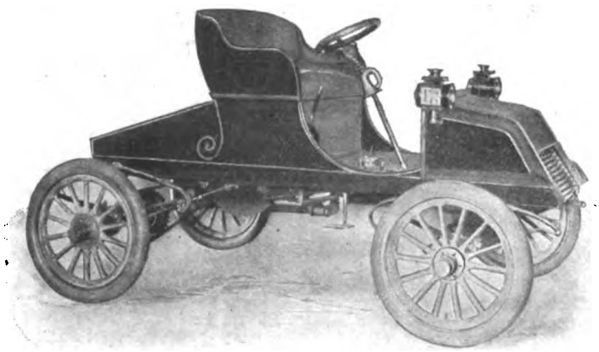
LARGEST AND BEST EQUIPPED AUTOMOBILE DEPOT
IN THE UNITED STATES.

ALL KINDS OF FRENCH AUTOMOBILE PARTS KEPT IN STOCK.

ELECTRICS CHARGED AND KEPT IN FIRST-CLASS ORDER.

You may not know that there is a runabout selling for a moderate price that is a reliable, handsome and serviceable machine. Let us send you a catalog of

THE GENERAL.



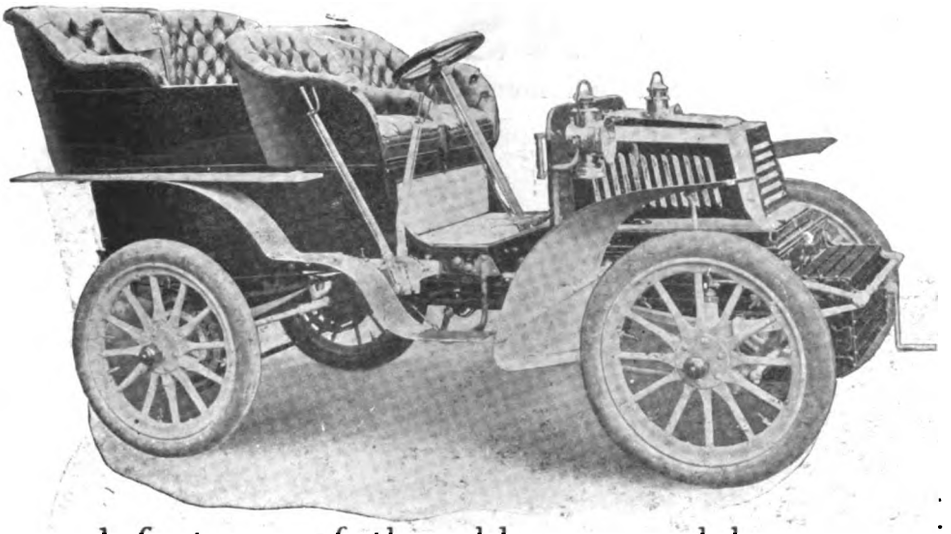
FOR ALL SEASONS.

Our 1903 Model possesses many distinctive features and advantages. The power is furnished by an 8 H. P. double cylinder gasolene engine.

OUR CATALOG EXPLAINS FULLY. AGENTS IN PRINCIPAL CITIES.

THE GENERAL AUTOMOBILE & MFG. CO., Cleveland, O.

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100%

Nine **Searchmonts** were entered in Endurance Contests in 1902, and all made **100% *Records.*** The **NEW Searchmont** retains all the good features of the old ones and has many improvements. It can be seen at the Chicago Automobile Show. Better examine it before purchasing.

GITHENS BROS. CO.,
1412 MICHIGAN AVE.,
Chicago Agents.

Searchmont Automobile Co.,

PHILADELPHIA, U. S. A.

STUDEBAKER Automobiles

----- ELECTRIC -----



NO EXPERT CHAUFFEUR NEEDED.

CAN BE RUN ANY DAY IN THE YEAR,
BY ANY MEMBER OF THE FAMILY.

WIDE TOURING RADIUS. A 1903 electric vehicle with a battery, which is durable and will give a run of 40 miles on one charge.

A SUCCESSFUL HILL-CLIMBER. Our machines will climb grades which are not only steep, but covered with sand and mud.

SMOOTH OPERATION. Controller has four speeds, allowing an unusual smoothness of operation in starting.

RELIABLE BRAKE CONTROL. All machines equipped with two brakes.

STRENGTH OF CONSTRUCTION. Built to be worthy in every point of the Studebaker name and reputation.

Studebaker Electric Automobiles will be exhibited at the Chicago Automobile Show, and can be seen at the following repositories of the

STUDEBAKER BROS. MFG. CO.

STUDEBAKER BROS. CO. OF NEW YORK,	Broadway and 7th Avenue, Cor. 48th Street, New York City.
STUDEBAKER BROS. MFG. CO.,	378 to 388 Wabash Avenue, Chicago, Ill.
STUDEBAKER BROS. MFG. CO.,	Cor. 15th and Blake Streets, Denver, Colo.
STUDEBAKER BROS. CO.,	157 to 159 State Street, Salt Lake City, Utah.
STUDEBAKER BROS. MFG. CO.,	317 to 319 Elm Street, Dallas, Texas.

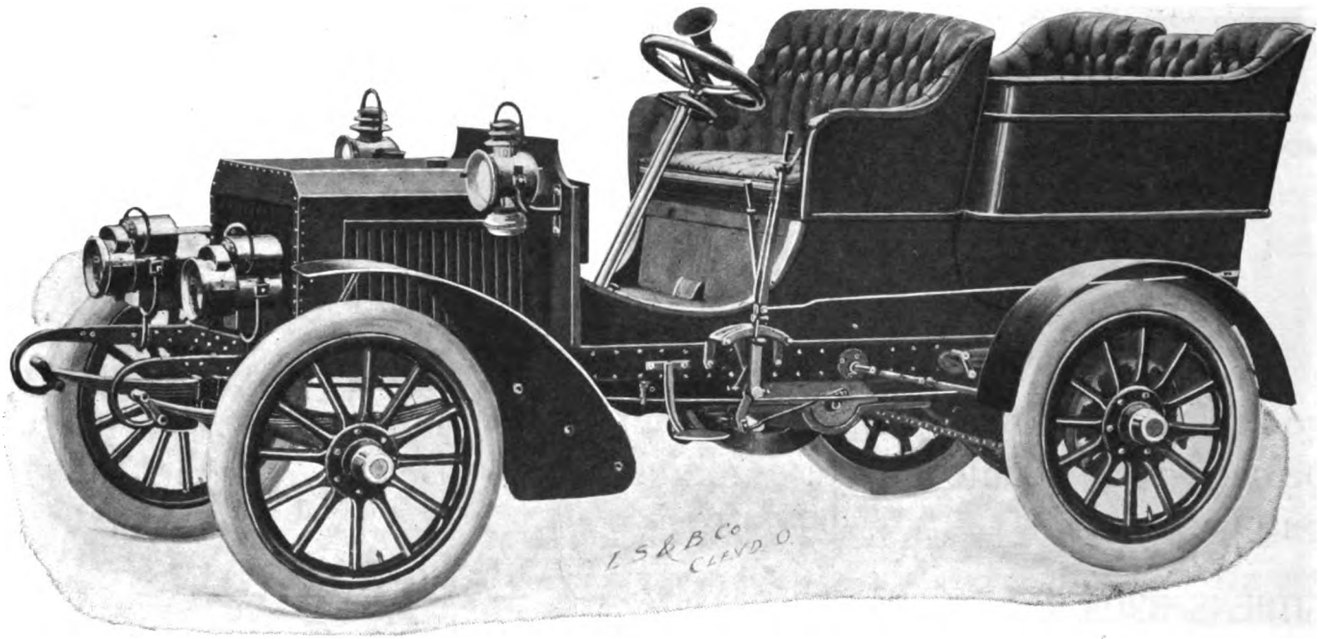
FACTORY AND GENERAL OFFICES, SOUTH BEND, IND.

FIRST-CLASS AGENTS DESIRED IN TERRITORY NOT ALREADY COVERED.

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THE STEARNS CAR

Received a lot of very favorable comments at the show.



The style and general design is right. The motor is powerful, with a perfect throttle, and runs silently and with no vibration. The attachments on the dash and controls at the wheel are good points. too. The small tube radiator is ahead of the time, and considering all things, **STEARNS CARS are worth more than they cost.**

Cadillac Auto. Co. of Ills.,
1312 Michigan Avenue, Chicago, Western District.

F. B. Stearns Co., Cleveland, O.

Elmore Exclusiveness

rests not alone in the successful use of the ELMORE TWO-CYCLE MOTOR, but in many other features of equal merit.

IT IS A DISTINCTIVELY AMERICAN CAR.

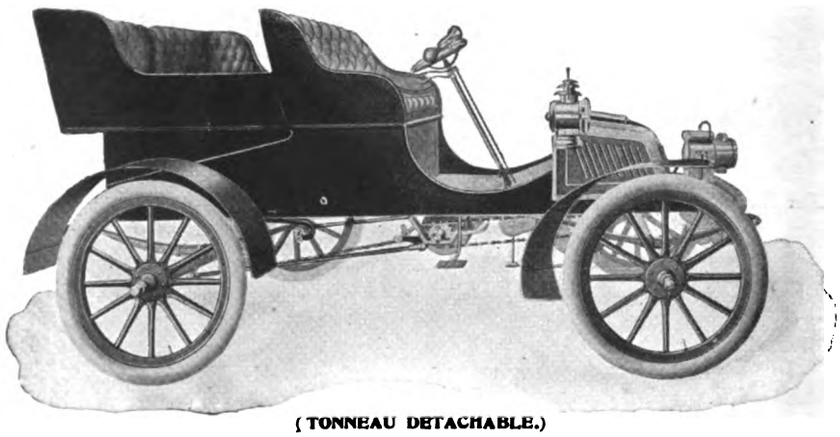
Men may pay more, but they cannot get a better one.

7-H. P.

Runabout.

1200 Pounds.

$800.



10-H. P.

Touring Car.

1450 Pounds.

$1400.

(TONNEAU DETACHABLE.)

MAY WE SEND YOU CATALOG AND PARTICULARS?

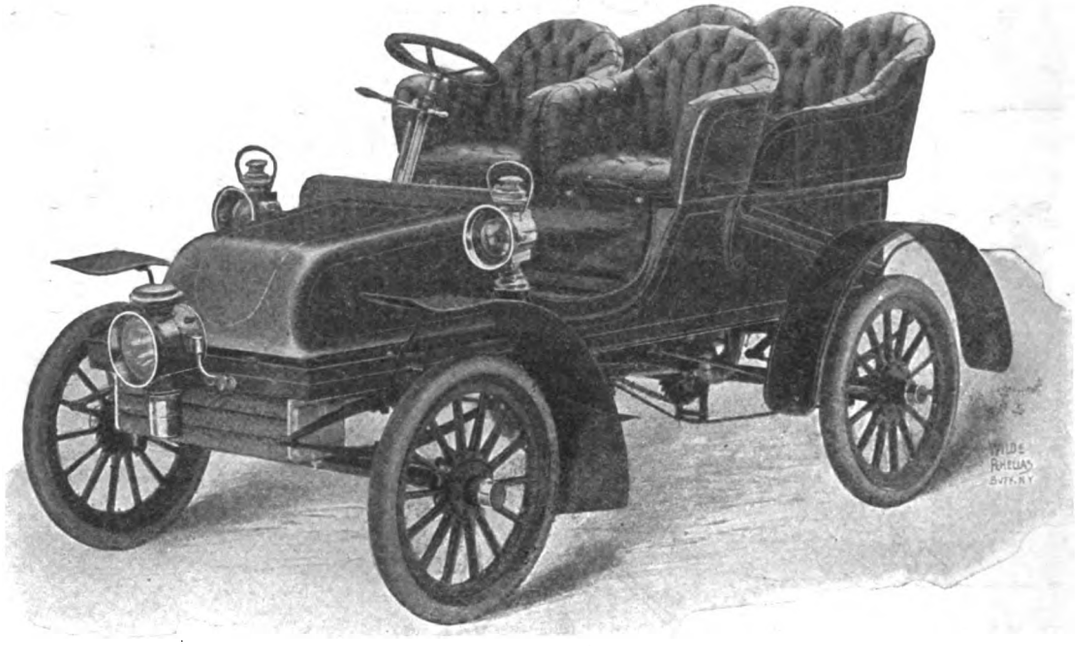
ELMORE MFG. COMPANY, = Clyde, Ohio.

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A HIGH GRADE CLIMBER.

HILLS AND BAD ROADS ARE NO OBSTACLE WHEN TOURING IN THE NEW

THOMAS TONNEAU, MODEL No. 17.



Simplicity of operation and ideal comfort represent only two of the many exclusive and splendid improvements, which are enjoyed in the use of this car.

Why consider buying an experiment, when you can secure a model No. 17, a car which has been tested through thousands of miles of all kinds of roads.

The victory and popularity gained by these machines at New York will be repeated at the Chicago Show.

Prompt delivery and an attractive proposition for agents making early application.

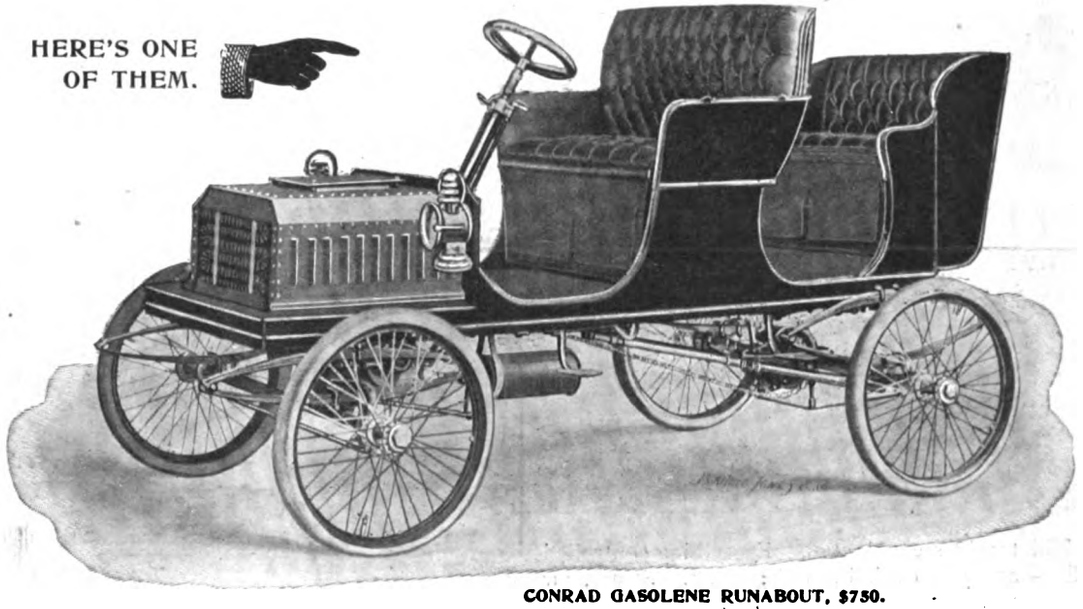
PRICE, $1,250.00.

BRANCHES: { New York City, E. J. Edmond, 52 West 43d St.
{ Boston, Mass., C. S. Henshaw, 145 Columbus Ave.

E. R. THOMAS MOTOR COMPANY, 1210 Niagara Street, BUFFALO, N. Y.

Conrad Gasolene Automobiles

HERE'S ONE OF THEM.



8 H. P. VERTICAL DOUBLE CYLINDER ENGINE.

SLIDING GEAR TRANSMISSION.

TWO SPEEDS AND REVERSE.

WHEEL STEERING.

CONRAD GASOLENE RUNABOUT, $750.

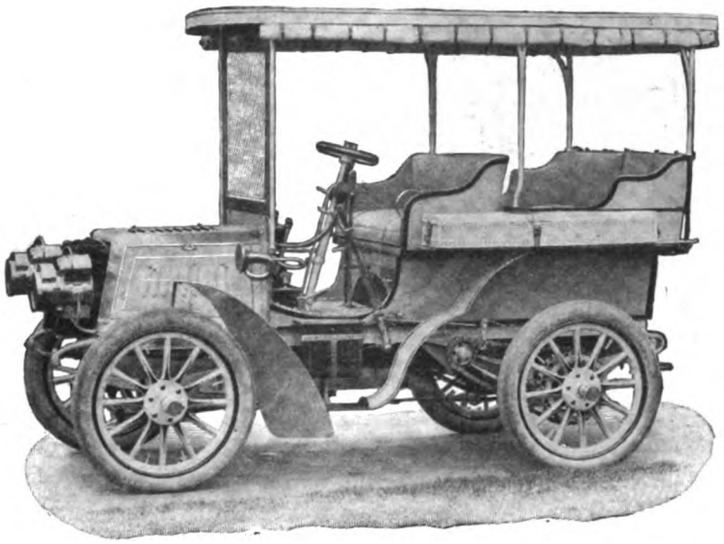
12 H. P. Touring Car with Tonneau, $1250, will be illustrated in next issue.

THE CONRAD MOTOR CARRIAGE COMPANY, 1411-1419 Niagara Street, Buffalo, N. Y.

NEW YORK CITY—Pennsylvania Electric Vehicle Co., 152 West 18th St.; BOSTON—Bates Brothers, 145 Columbus Ave.; PHILADELPHIA—Pennsylvania Electric Vehicle Co., 250-256 North Broad St.; PITTSBURG—L. G. Martin Co., 528-530 Grant St.; MINNEAPOLIS—Northern Cycle Supply Co., 116 South Sixth St.; ROCHESTER—F. A. Mabbett, 66 East Ave.; BINGHAMTON—Binghamton Automobile Station, 259 Water St.; DETROIT—W. H. Weber, 288 Woodward Ave.; DENVER—Felker Cycle Co.

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Robinson Touring Car

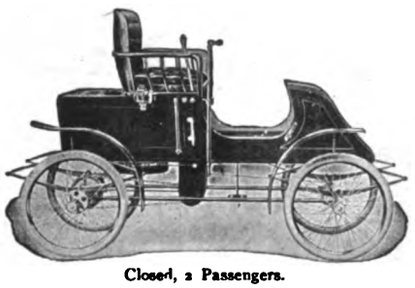


Fully equipped with canopy top, baskets and everything necessary.

Engine, 4 cylinders, 16 horse power.

Price, $5,000.

POPE-ROBINSON CO., - Hyde Park, Mass.



Closed, 2 Passengers.

You would not travel from

Maine
to
California

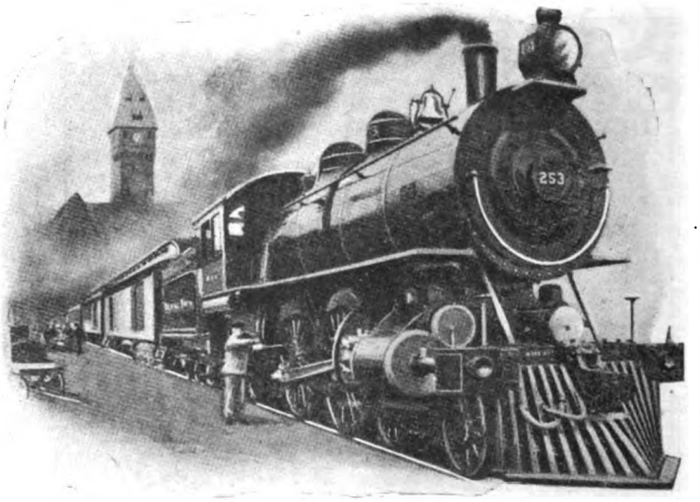
in anything but a palatial train, drawn

BY STEAM.

WHY?

Because it is Reliable.

Then why hesitate between the known and unknown power. Steam as applied to the



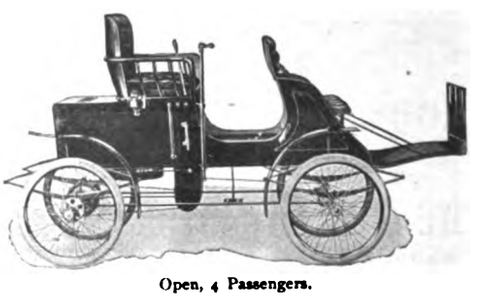
Gold Medal Prescott is Perfection

Flexibility of control. Hill troubles eleminated. Everything controlled from the seat, even the fire—and you can't burn the boiler. Steam, air and water pumps. Foot reverse. Automatic lubrication. Water lift, etc.

Everything perfect. Get its specifications and record.

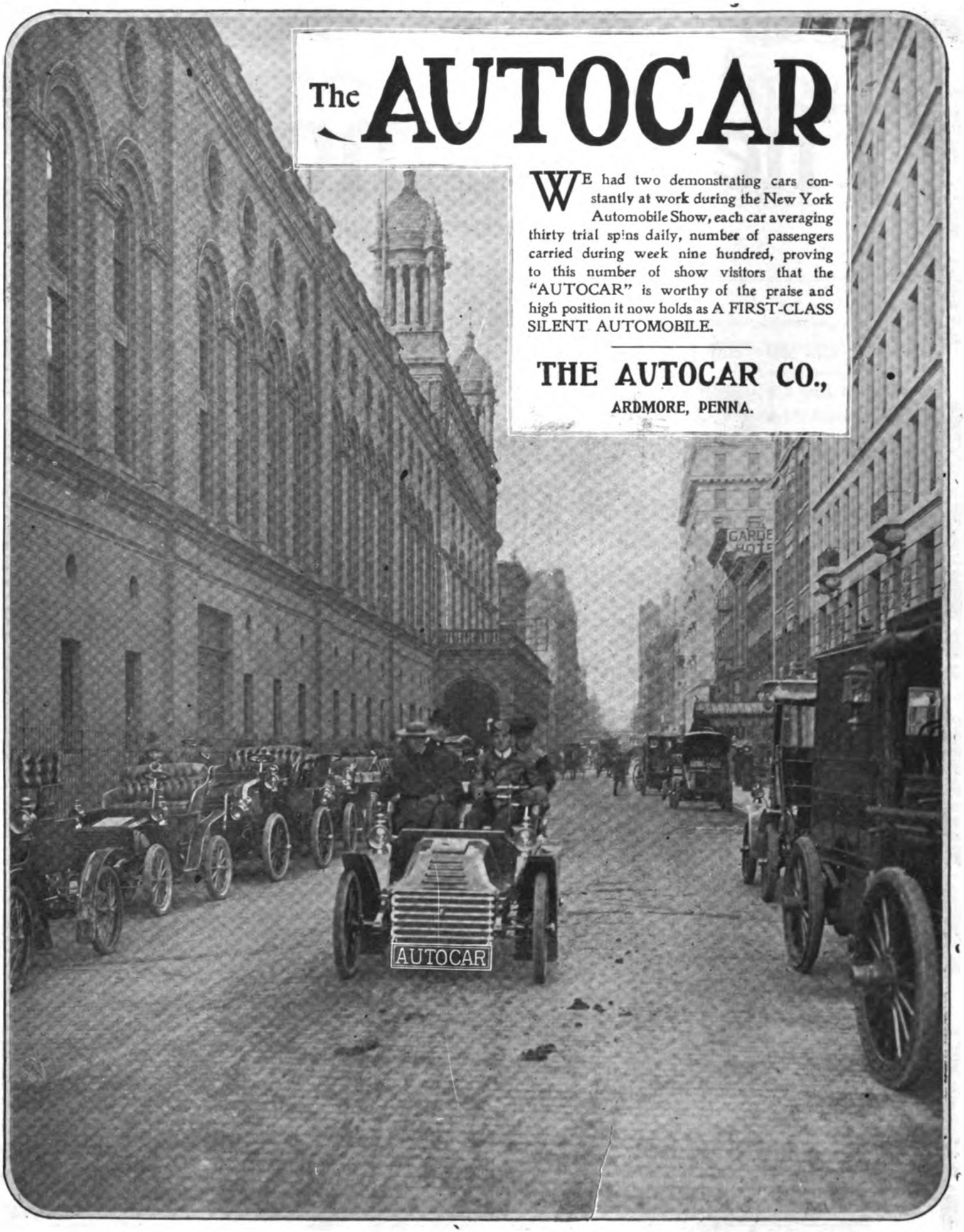
FACTORY, PASSAIC, N. J.

PRESCOTT AUTO MFG. CO.,
83 Chambers Street, New York, N. Y.



Open, 4 Passengers.

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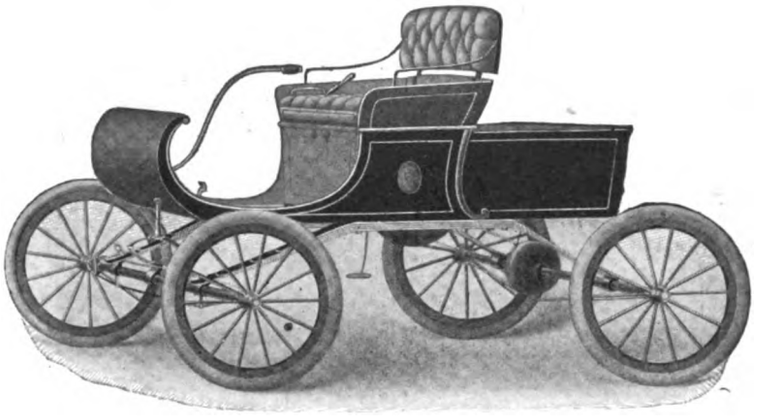


The demonstrating Autocars outside Madison Square Garden. We exhibit and demonstrate at the Chicago Show.

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The Oldsmobile

THE CAR WITH A RECORD.



The satisfactory service of this world standard runabout means more than all the claims of its imitators. 7000 machines in daily use for the past three years prove more than the theoretical arguments and experimental efforts of the "paper manufacturers." The OLDSMOBILE is built to run and does it.

The development along the most practical lines of this mechanical marvel marks the most advanced stage of automobile construction and keeps the OLDSMOBILE "The best thing on wheels."

PRICE, $650.00.

Each working part is as simple as skill can devise, as strong as the best Drop Forgings can make it and as efficient as mechanical perfection can produce. There is nothing problematical in the OLDSMOBILE.

SELLING AGENTS:

Oldsmobile Co., New York City, N. Y.
National Capitol Automobile Co., Washington, D. C.
Quaker City Automobile Co., Philadelphia, Pa.
H. B. Shattuck & Son, Boston, Mass.
Banker Bros. Co., Pittsburg, Pa.
Oldsmobile Co., Cleveland, Ohio.
Oldsmobile Co., Githens Bros., Chicago, Ill.
Fisher Automobile Co., Indianapolis, Ind.
Olds Gasoline Engine Works, Omaha, Neb.
W. C. Jaynes Automobile Co., Buffalo, N.Y.
P. L. C. Martin Co., Plainfield, N. J.
Autovehicle Co., Newark, N. J.
P. W. Stockbridge, Paterson, N. J.
Mississippi Valley Automobile Co., St. Louis, Mo.
George E. Hannan, Denver, Colo.
Day Automobile Co., Kansas City, Mo.
Clark & Hawkins, Houston, Texas.
Hyslop Brothers, Toronto, Ont.
The Oldsmobile Co.—C. C. Moore Co., San Francisco, Cal.
John W. Chester Co., Nashville, Tenn.
A. P. Chase & Co., Minneapolis, Minn.
J. E. Richard, Columbia, S. C.
Oldsmobile Co., Milwaukee, Wis.
The Oldsmobile Co., Los Angeles, Cal.
The Oldsmobile Co., W. C. Rands Co., Managers, Detroit, Mich.
Rochester Automobile Co., Rochester, N. Y
Seager & Close, Tucson, Ariz.
F. E. Gilbert, Jacksonville, Fla
Texas Imp. & Machinery Co., Dallas, Texas.
Abbott Cycle Co., New Orleans, La.
C. H. Johnson, Atlanta, Ga.
Sutcliffe & Co., Louisville, Ky.
Brown-Thompson & Co., Hartford, Conn.
Mason's Carriage Works, Davenport, Ia.
Adams & Hart, Grand Rapids, Mich.
Kline Cycle & Auto Co., Harrisburg, Pa
The Oldsmobile Co., Mohler & DeGresse, Mexcio City, Mexico

Agency for Great Britain: THE OLDSMOBILE COMPANY OF GREAT BRITAIN, 100c Queen Victoria St., LONDON, E. C.

WRITE FOR INFORMATION AND ILLUSTRATED CATALOGUE TO

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, February 12, 1903. No. 20

WANTS CONTEST ABANDONED

N. A. A. M. Votes Against Commercial Vehicle Test—But it Will Probably Occur.

Among other things done at the meeting of the Executive Committee of the National Association of Automobile Manufacturers, which was held on February 4 to elect officers, was the running through of a resolution stating that the organization was opposed to the holding of any contest for commercial motor vehicles this year. The resolution embodied a clause providing for a copy of it being sent to the Automobile Club of America, which, as is known, has been planning to hold such a contest this spring.

The news of this action was not given out promptly, and after an inkling of what had happened had been obtained it was impossible to get a copy of the resolution from the secretary or any information about the proceeding beyond the admission of the fact that such action had been taken, and that the vote had been unanimously in favor of it. The pompous secrecy affected by the reintrenched secretary concerning the doings of the association prevents the name of the father of the resolution from being known, and also whatever of reason for it might have been offered.

The resolution was forwarded to the Automobile Club, and there, for the present, it rests, no official action having been taken on it.

Inquiry among members and officials of the club brought out expression of the sentiment that it was not likely that the resolution would lead to any alteration of the plans of the club to hold a contest. As one man put it:

"The club went into this thing at the solicitation of certain manufacturers. The N. A. A. M. as an organization was not asked what it thought about it, but letters were sent out to all the various manufacturers asking them to confer with the Contest Committee of the club and express their views. If the manufacturers do not want to enter such a contest the club does not want to hold one. The club has no axe to grind, and seeks to do only what it believes to be for the good of the sport and of the industry. The manufacturers individually do seem to want such a contest, however, for on January 22 representatives of eight firms met with the committee at the clubrooms, and all seemed to be unanimous in favor of the proposed event. At the same meeting letters of approval were at hand from half a score of other concerns, and since then further indorsements of the plan have been received by mail. I see no reason why the club should abandon its plan, and I think it will not do so. To some it looks as if those who now have the 'cal' on the commercial vehicle business wanted to prevent a contest, because it might bring into prominence the cars of some other concerns now lesser known, and I shouldn't wonder if those who think this way are more than half right. At any rate, that is the view the general public is apt to take of such proceedings."

Have Joined the N. A. A. M.

The Hoffman Automobile Co., of Cleveland, and the Neftel Automobile Co., of New York, were elected active members of the National Association of Automobile Manufacturers at the last meeting of the executive committee. The American Coil Co., of Somerville, Mass., was elected to associate membership.

Conrad Names Directors.

Notice was filed in the County Clerk's office in Buffalo last week by the Conrad Motor Carriage Co. to the effect that M. M. Drake, F. P. Conrad, G. W. Atterbury, E. B. Olmstead and W. E. Pengot had been elected directors.

Miller Going Abroad.

Charles E. Miller, the well known New York jobber, has booked passage for Europe. He has several irons in the fire on the other side.

Slusser Appointed Sales Manager.

R. W. Slusser has been appointed sales manager of the Fredonia Mfg. Co., Youngstown, Ohio. He assumes the duties at once.

CLEMENT DEFERS MANUFACTURE

French Maker Will Send Over Complete Cars now and Establish American Factory Later.

Prior to sailing for France last week, M. Clement came to a decision regarding the plans of his American company, the Clement Cycle Motor & Light Vehicle Co. The manufacture of complete automobiles at Hartford will be postponed for a year. During 1903 Clement cars will be imported, and meanwhile preparations will be made to produce them in their entirety next winter, so they will be ready for the 1904 market.

The postponement was necessitated by the impossibility of making the necessary additions to the Hartford plant in time to prepare for the approaching season. Machinery will be laid down on an extensive scale, M. Clement's predilection for the best obtainable in this line being well known. The Clement cars have met with a ready sale, and this has led to an enlargement of the French plants as well as to the determination to manufacture in this country.

Before sailing M. Clement expressed himself as being much impressed with the immensity of the American market for automobiles, and stated that his plans were largely due to this fact.

McCrea Resigns.

J. W. McCrea, sales manager for the F. B. Stearns Co., Cleveland, has resigned that position. As he is lacking neither ability nor popularity, he is certain to be heard from shortly.

White Sold up to June.

"The demand for our touring car is simply remarkable," said Windsor T. White, of the White Sewing Machine Co., when in the city last week. "We are sold right up to June, and the orders are still coming."

To Enter Automobile Field.

According to a press dispatch the Eckhart Buggy Co., of Auburn, Ind., will manufacture automobiles.

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WHY FRANCE WANTS IT

Acquaintance With Course a Big Factor in Cup Race—Mercedes Features—Pemanent Show Proposed—Serpollet's Innovation.

French Bureau Motor World.
2 Rue d'Abbeville.

Paris, Jan. 26.—No decision has yet been arrived at as to where the Gordon Bennett race shall be held. The A. C. F. is more than anxious that the race should be held over the French roads, which are not only the best, but which are also the best known to the French competitors. It is a very important factor in a race to know the road perfectly, for not only is there no hesitation and consequent slowing down to decide which turn to take, but also, if one knows the road perfectly, one knows where the highest speed may be indulged in without risk, and where it is necessary to slow down and go carefully. The French chauffeurs know every inch of the Paris-Bordeaux road, and therefore the A. C. F. is making most strenuous efforts to have the race held in connection with the Paris-Madrid race.

The details with regard to the Mercedes cars of 1903 pattern are beginning to leak out. In the first place, the Cannstadt Daimler Co. are making a special racing model which has nothing in common with the touring cars they intend to turn out. The racing cars, it is said, have motors of 100 horsepower situated in the middle of the car, instead of in front. The driver is to be seated over the back axle, which, it is said, is to be a live axle. The greater part of the weight of the car will therefore be situated over the driving wheels, which will therefore bite the ground much more efficiently. The steering pillar is said to be almost horizontal. In the touring cars the Mercedes 1903 models are four in number, viz., 18, 24, 40 and 60 horsepower; and there are several important changes in the details. The ignition arrangements where they make the rupture in the cylinders are to be placed on the front of the cylinders, instead of on the side, as in the 1902 model. They will therefore be much more accessible; otherwise they are practically the same as in the old model. A plug hole is left, however, and in this an ordinary sparking plug can be placed for electric ignition by means of a high tension spark. The admission valves are very large, and are placed on the top of the cylinders in the same position as the inlet valves on the Buchet motor. The change of speed gear, instead of being worked by means of racks and pinions, is worked by cams which are actuated by a slotted disk. The clutch is completely transformed, and rather resembles the Clement clutch. Instead of winding around the driving shaft, as in the 1902 model, the clutch consists of a steel band which expands and presses against the inside of the large hub of the flywheel; the outer portion of the flywheel, outside the hub, forms, as usual, the fan which sucks the air through the multitubular radiator.

Paul Meyan in the France Automobile makes the suggestion to open a permanent exhibition of aautomobiles in the Palais Royal. It will be remembered that the Palais Royal, situated behind the Avenue de l'Opera and close to the Comedie Française, used to be the centre of attraction in Paris. It is an immense building, making the four sides of a square and surrounding a large garden. It used, as it name indicates, to be a royal residence, but gradually, as the city of Paris grew, the aristocratic residential quarter went further and further westward, and the Palais Royal was let off for shops and offices. It then became the most fashionable resort, and the best jeweller shops were to be found there, and in the gardens there was always music to a fashionable audience of promenaders. Gradually, however, the shops drew out westward, first to the Avenue de l'Opera, then to the Rue de la Paix, and lastly to the Rue Royale, and the Palais Royal fell on evil times. At the present day most of the shops are to let, and those that have tenants sell only imitation jewelry, photographs and cheap articles of one kind or another, and the passages and gardens are mostly deserted. Fashionable Paris hardly knows where the Palais Royal is. Paul Meyan's idea is to turn it into an "automobile city," and certainly it would be an ideal place for the business, and worthy of the great trade which has developed with such rapidity during the last decade. The question is being studied carefully by those interested in the trade, and shortly a scheme will be put forward to accomplish this happy result.

Mr. Leon Serpollet, of the firm of Gardner & Serpollet, the makers of steam cars, is at present at work on autocars for use on the railroads. Mr. Serpollet, after long experiments, has found it possible to make an autotrain which can run at an average speed of 75 miles per hour, including stops, and the Paris, Lyons and Mediterranean Railway Company has given an order for one of these cars, to run between Paris and Marseilles, with thirty passengers. The distance is 437 miles, and the journey takes at present eleven and one-half hours, whereas the autotrain will accomplish it in less than six hours. The motor and boiler will be of 250 horsepower, and will be placed very low down, in order that the car may be stable around the curves; they will be placed at the front end of the carriage, which will have a wind shield in front. The car will be 17 metres, or 18⅝ yards, long, with a distance of 14¼ yards between the axles. There will be five compartments, each holding seating room for five passengers, and the rear part of the car will be formed into an observation car. The introduction of these autotrains, if successful, will lead to a great change in the future in railway travelling. Special autotrains will be much more accessible to the public, and it will be possible at a comparatively small cost to have one's own special autotrain fitted up with all one's comforts and conveniences.

It has been suggested that it would be a good idea for the French Automobile Club to fix the dimensions of the motors to be used in the great races. The idea has been officially brought before the Chambre Syndicale de l'Automobile, and may become a part of the "Circuit" which they are organizing for the summer season. No new rule could, it is asserted, be more beneficial to the trade, for it will enable one to judge with precision the relative merits of the methods applied by different makers. For instance, in order to have a certain volume in the cylinder, the stroke and bore may be varied almost indefinitely. Some makers claim that equality in bore and stroke gives the best result; some, on the other hand, prefer a long stroke and a small bore, whilst others again adopt a wide bore and a small stroke. It is almost impossible to tell which of the three systems is the best, for in almost every case the volume varies. If, however, in a big race the volume is fixed beforehand, one will be able to judge fairly accurately and choose the best arrangement.

Cold Weather Activity.

During the few days of cold but clear weather that New York City has enjoyed recently there was abundant evidence that automobiling activity is not a matter of season. At various stations visited it was found that there was plenty of action among the "boarders," the hands being kept fully busy attending to the cars going out and coming in. At more than one garage the floor looked so empty on Monday as to provoke comment, and the condition was explained not by a lack of patronage, but by the fact that the cars of patrons were being used by them.

About nine-tenths of all the cars kept on storage in public stations are in active commission all winter, according to the statements of those in charge. The signs of this activity are noticeable in a casual glance about the stations, at the number of cars equipped with glass panels in front, canopy tops and side curtains. At the Automobile Exchange in Thirty-eighth street the big Mercedes of H. S. Harkness stands thus rigged every day, ready for a call at any time, and it is only one of scores of carriages kept in similar readiness by well known operators. At the station of Barry & Hayes, in East Fifty-eighth street, it was noticed that the Winton touring car with a canopy top belonging to Reginald Vanderbile had received a new coat of white paint and looked fit for a trip of any sort up to a bridal tour.

From Windsor Castle to High Wycombe, eighteen miles in forty-five minutes, is the record established last week by King Edward in an automobile. This figures out twenty-four miles to the hour, just double the legal limit. No arrests followed.

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AWAKENED CLEVELAND

Show Performed a Good Service Locally, Many Actual Sales Being Made—Two New Cars Shown and one of Them Tested.

Cleveland, Feb. 8.—Despite the conspicuous absence of several prominent local manufacturers, the Cleveland Automobile Show, held at the armory of the Cleveland Grays, which closed last night, was a pronounced success. The show was promoted by Captain Shupe, George Collister, W. F. Sayle, and "a fellow named Hanks," the latter no less than the redoubtable Chas. B. —Winton Hanks, of course.

From all reports a surprisingly large amount of business was done, the attendance during the week being good and of a high class, and the management of a kind that other local shows would do well to pattern after. Incidentally, the value of local shows in crystallizing opinions and in transforming possible purchasers into actual buyers was eye-opening.

It is strange that despite the prominence of Cleveland as an automobile manufacturing centre, sales locally have not been anywhere near what might be expected. The same reasons why a prophet is not without honor save in his own country is probably responsible, so many prominent cars being made here that proximity to them and familiarity with their names resulted in indifference and apathy.

The show has changed all this and may be said to have waked up Cleveland to a true appreciation of what it has been missing and what the rest of the world has realized for some time. The result was a rush of orders, Winton selling many more cars than had been apportioned to the city, while the other local cars exhibited, such as F. B. Stearns, General Auto & Mfg. Co., Hoffman, and others, were jubilant over the volume of business done.

Even the non-exhibitors like Baker, White, Peerless and American felt the stimulus in a sudden and unlooked for increase of local orders.

As a sample of the business done by out of town exhibitors, the Shelby Motor Car Company sold four big touring cars and six of their combination two and four passenger vehicles, whereas up to this time they had been unable to get a foothold in the city. Better known cars did correspondingly better, among them being the new gasoline Locomobile touring car, Yale, Autocar, Searchmont and others.

Of the smaller cars Oldsmobiles, of course, Northern, Elmore and Cadillac led the way and interested an army of buyers. Similarly, in the electric class the Columbia, National and Waverly in addition to the Baker, all did well.

Most of the exhibits were by local agents, that of the Cleveland Auto & Supply Co. being most imposing. This concern showed Columbia, Waverly and Studebaker electrics, Locomobiles in gasolene and steam, Searchmont, Cadillac, an Orient buckboard, a motor bicycle and an extensive line of sundries and parts.

The Ohio Motor Car Company, with a fine display of Northerns, Nationals and others, also made a brave showing.

The tire makers on hand were Diamond, Goodrich, Fisk and Hartford, while among accessories and parts Kelly generators, Veeder, 20th Century, Westinghouse and others shone forth.

In novelties a new four-cylinder chassis with balanced motor placed crosswise and a direct drive, the shaft being placed at an angle that caused much shaking of heads among the sharps, was shown by Rogers & Thacher Mfg. Co. The motor was said to deliver about 35 horsepower, and the exhibit was a rallying place for the curious during the week.

There was also exhibited for the first time the "Union" automobile, made by the Union Automobile Company, of Union City, Ind. It has been thought best to mention this separately first, because of its being a newcomer in the show line, and, second, because of the truly marvellous demonstration it made with a Motor World man as a passenger.

First, the car is a heavy, even clumsy looking vehicle of the convertible two and four passenger style, a cross somewhere between a runabout and a touring car, inclining more toward the latter with its big 34-inch wheels and great weight. However, if handsome is that handsome does, the Union must be accorded a high place, for in the Lambert engine and transmission it has a motive power that will literally take it almost anywhere with absolutely no fuss or trouble.

This engine is of 8 horsepower, two-cylinder, four cycle balanced type.

The crank is carried in the centre of the engine with a cylinder of both ends. Both cylinders act on the one crank-shaft, which is of the double-throw type. By this arrangement one piston balances the other, one connecting rod balances the other, and the shaft balances itself. Therefore, no weight is needed on the flywheel to balance these parts. The Lambert is a truly balanced engine and there is an absolute freedom from vibration of any kind at any time.

The transmission is of the much-discussed, much-maligned friction system, but it does the business. The flywheel of the engine is of the disk variety, its face covered with a patented composition plate of special friction qualities.

The friction wheel is set direct on this plate, the shaft which carries it being placed parallel with the centre, the wheel being moved in either direction on the shaft and across the face of the friction plate by means of the controller lever.

With this engine and this transmission a Motor World man was taken first up the Water street hill, from the Erie depot, next down the hill by the viaduct to where the Detroit and Buffalo boat landings are. Two-thirds down this latter hill the engine was reversed and the car easily backed the entire way up the hill, never faltering for an instant or making any fuss whatever.

To anyone who knows this grade the performance can be appreciated. Sufficient to say it is one of the steepest to be found anywhere.

After this the Lake Shore depot hills were easy, though they both are climbs of the severest kind. No attempt whatever was made to "rush" them, the car simply keeping on its way up the same even rate of speed of which it had been travelling.

There was absolutely no vibration, no pounding, no strain. The facts speak for themselves, and are given simply because they are facts and of the kind that are thought worthy of recording.

With the faults of style and superstructure corrected the Union would seem to have possibilities.

A pleasant feature of the show week was a smoker and vaudeville given on Thursday evening after the close of the show. One hundred and twelve of the exhibitors and visitors attended, and all had a good time.

If Alexander Winton is "mentioned" for President of the United States don't be surprised. What he doesn't get in the way of press notices isn't worth getting. During the Cleveland show a few of the newspaper men were told—sub-rosa, of course—that the three warring Republican factions of Cleveland—the Hannaites, the Kissonites and some other ites—had hit upon Winton as the very man to unite upon and defeat the terrible Tom Johnson, that they had but the very evening before sent emissaries to Winton urging him to accept the nomination, pointing out that the very fact that Winton was not a politician was all in his favor, that he was the best-advertised man in the city, etc.

Perhaps the fact that Winton would out-red-devil Tom Johnson's famous red-devil campaign might have had something to do with it: and again, perhaps the fact that Alex Winton has, in the person of one Charles B. Shanks, a press agent that a prima donna might envy, may have had something to do with the story.

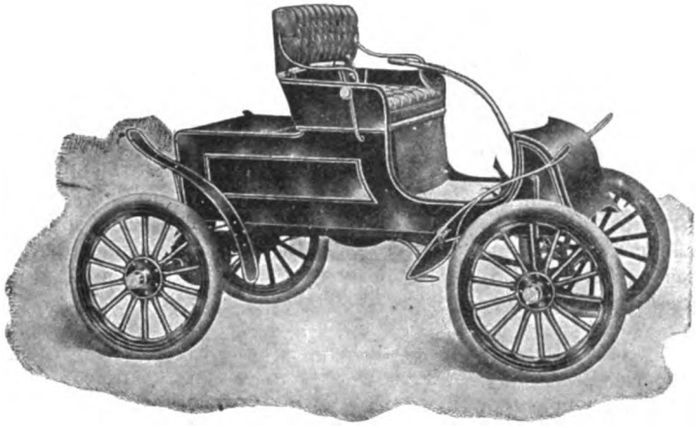
However, the report had it that Winton, like the canny Scot he is, turned a deaf ear to the entreaties of the politicians, resisting all their blandishments, and gently but firmly declining to be interrupted in his work of building the cup-racer by such a trifle as running the city of Cleveland.

If the Bennet Cup race does not take place in Ireland it will not be the fault of the Irish people. They heartily favor it. A poll has been made of the Irish members of Parliament, and without a single exception they have promised to vote for a bill legalizing the race.

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OHIO MOTOR CAR CO., 317 Huron St., Cleveland, Ohio. NATIONAL AUTOMOBILE & MANUFACTURERS CO., 26 Fremont St., San Francisco, Cal.
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"Inadvertently I allowed my subscription to The Motor World to lapse, but I have just renewed it through an agency in Boston. I value it too highly to wish to go without it, as I think it the most independent of them all. But the price is too low; you ought to charge $5 per year."—Elliott C. Lee, Brookline, Mass.

Let the Contest go on!

A great deal of speculation as to the motives that inspired the action has been stirred up by the adoption of the resolution by the N. A. A. M. against the holding of a contest for commercial vehicles this year. Foremost among the speculations has been that of whether or not the action was inspired by fear of open competition.

A certain few concerns represented on the executive committee of the N. A. A. M., making mostly electric trucks and delivery wagons, now have almost a monopoly of the business in motor vehicles. They are broad spirited and progressive concerns, to whom the imputation of petty jealousies and fears of rivalry would seem unjust, but such is the tendency of the public mind that this will be the most natural course for it to take.

It is true that there are known now to be in the field several manufacturers of steam and gasolene trucks who probably would welcome a contest open to all in which they could show the superior radius of distance that such vehicles have over electric trucks. It is generally understood also that there are others, as yet hardly heard of, who are experimenting in this field, and who would in all likelihood be brought out by such a contest. The development of newer trucks and wagons cannot be prevented by any such course, nor can their existence be kept from the knowledge of the public by any narrow minded attempt to suppress a contest that is in line with the public sentiment. Such a course can only react upon those who incite and support it.

The folly of the action quite justifies the general condemnation it has received and is certain to receive. It is not only futile, but unnecessary. There is certain to be a demand for business wagons and trucks having a wider range of service than can be given by electric vehicles, and this demand is just as certain to be supplied. No effort of the electrical manufacturers can stop it. It is simply silly for them to fear it. The electric truck and wagon, like electric runabouts, have a sphere of their own in which they cannot be displaced, but vehicles of other power must do what they cannot do. Horse drawn delivery wagons now carry goods to places twenty miles away from the metropolis, and motor delivery wagons must be supplied to do the same, and incidentally climb the hills of the suburban roads.

The electric truck has no call to play dog in the manger, because the electric motor has one feature of superiority for commercial use that seems likely to keep it ever in the van for hauling goods about the city or within a limited radius. This feature is its simplicity of operation and control. Always the steam and gasolene engine will for business uses be handicapped by the fact that they require an operator somewhat superior in intellect to the average truck driver, or at least one with experience, while the most ordinary sort of workman can be sent out with an electric motor after very brief instruction. He needs no mechanical ingenuity. This fact alone assures the electric wagon and truck a permanent and probably predominant place in city hauling. It cannot hope to have the long distance cross country work. Why should its sponsors seek to prevent the long distance wagons from demonstrating what they can do? It is a short sighted policy, truly.

The contest committee of the Automobile Club has proven itself too wise and just in the past to warrant any fear that it will ask anything that is unreasonable in the way of a test. The club has no axe to grind in this matter. It undertook to promote the test in response to the requests of some manufacturers. Its proposition to hold a contest was indorsed by a number of prominent makers. The N. A. A. M. was not asked for its opinion. It was quite natural that the adoption of the resolution and the forwarding of it to the club should be regarded as an impertinence. The club is an organization quite capable of acting independently of the N. A. A. M. and proceeding with its plans. It should do so, and it seems quite likely that it will do so. If the manufacturers who fathered the impertinent resolution do not want to go into a competition open to all it is their privilege to stay out. The business public that is interested in the demonstration of commercial vehicles will be at liberty also to draw its own inferences.

There is no reason why a contest could not be arranged to suit all styles of business vehicles. The committee of the club has already announced that a good part of the course will be through city streets. This would be just the thing for the electrics. If the steam and gasolene vehicles seek for a test involving distance and hill climbing separate classes easily can be arranged for them, and the electrics can gracefully withdraw.

Both the virtues and the limitations of the electric wagon are pretty thoroughly understood now. An attempt by the electrical makers, who now have the trade, to keep the steam and gasolene trucks in the shadow would fool no one.

By all means let the A. C. A. proceed and arrange a contest that will show what each class of vehicle is capable of doing. There is room for all. The demand for commercial vehicles is here. The business public wants to know what they can do. For the good of the sport and the industry, and in the name of progress, hold a contest and show them.

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Future of Big Touring Cars.

One of the subjects much talked about of late concerns the future of the expensive, expansive, high powered touring car. None doubts its impressive magnificence; indeed, it is this very magnificence, unmistakably conveying suggestions that such cars are only for the rich, that has given rise to discussion.

With so many makers engaged in their production there are those who are fearful that overproduction may ensue, and it is not to be denied that there are some grounds for caution of the sort, if not for fear.

To undertake to estimate the number of people to whom cars at from $2,500 to $6,000 are possible would smack of wild guesswork; but it is reasonably safe to say that the number is limited, if not narrowly limited, then limited at any rate. It follows that the production of cars that appeal to this class must be, or should be, limited. Happily their construction is such that they cannot be turned out in great numbers, but as the touring car is now in the ascendancy there may in some quarters exist a disposition to force production, and to reckon without regard to the future. We prefer to believe, however, that makers are fully aware that there can be but a comparatively limited demand for big cars, and have reckoned and are reckoning accordingly. We take small stock in the fear that a glut will result or stagnation follow.

The touring car is so inviting and so companionable that its future must within reasonable bounds continue to enlarge. In time, the natural lowering of price will make for this enlargement, but at present there is no sign of or reason for it, and as comparatively few manufacturers have all their eggs in the one basket, the danger or overproduction and the troubles which it carries in its train is more of sound than of substance.

The maker who produces a high priced article of any sort and does not see that the demand must necessarily be of relatively narrow and narrowing limits, is a poor manufacturer, and a poorer merchant, and should seek some other sphere.

Common Sense in the A. A. A.

Up to date the American Automobile Association has been chiefly remarkable for what it has not done. The same is true of the American Motor League, the latter's most notable performance being its recent selection of a man who is not even an automobilist as its president. And yet the numerous successive waves of adverse legislation and good roads movements never offered more fertile fields for useful and effective labor.

The first glimmer of hope, and, we may add, of common sense, that has been discernible since the organization of either rests in the suggestion discussed by the directors that membership in the association be thrown open to individual automobilists, a suggestion which we offered and urged at the time of its formation. The club limitation is a narrow one, and makes the association untrue to and unworthy of its title.

The aims and objects of the Association and the League are identical. Why there should exist two weak and commonplace organizations when one strong one could work to so much better purpose, is beyond us. There is no reason for it. What is good for the individual is good for the club member, and there is no reason why they should not work in harmony for the common good.

We believe they will do so, and as the stronger of the two, the American Automobile Association is the one to show the way. The long and short of it is that the League and the Association should consolidate. As the former is living not more than a nominal existence and has forfeited hearty support by choosing a man not an automobilist for its head, it has little to lose, and the one stronger organization that should result from amalgamation should accrue more substantially to the interests of automobiling than has the weak and divided and halfhearted efforts of the past.

"We desire to congratulate you on the completeness of the Motor World's New York show number. It covered the ground considerably better than any other paper published, and established a record for completeness of work that will be difficult to beat."—(Thomas B. Jeffery & Co., G. W. Bennett, sales manager.

Antomobile Instruction.

Pedagogic instruction in automobile construction and operation is apt to be looked upon askance by some who pin their faith utterly to the efficiency of the school of experience. The fact that Columbia University has decided to introduce a course in automobile engineering is not one to be regarded lightly, however. It is an eminently proper move, and one apt to be far reaching in its results. The knowledge to be gained through the medium of a course of lectures, however ably illustrated they may be, will not be the same for practical purposes as the knowledge gained in the shop and on the road, but in some respects it may be of wider scope and more thorough, and may better prepare a man for unusual exigencies than the knowledge possessed by the average operator, which too often is limited to the features of his own machine. A thorough theoretical knowledge of the subject is a splendid aid to the scientific imagination when it is called upon to conceive of what the difficulty is in a strangely new piece of trouble.

In Paris, it is said, the operation of automobiles is being taught to children in the primary schools. This looks like carrying the matter a bit too far, but it would not be a bit bad if the policemen of our big cities were compelled to know a thing or two about automobile engines. More than one policeman has run amuck trying to take a stray machine to the station house, and in the future, when the automobile is in general use, the need for proper knowledge of them by policemen will be multiplied. It is a sight worth stopping to watch when a giant policeman of the Broadway squad in New York starts in to straighten out a tangle of obstinate and profane truckmen. The policeman cannot be "jollied" by the drivers. The horses are yanked this way and that by their bridles and the road quickly cleared. But what would the same big policeman do with a tangled blockade of motor trucks and wagons of steam, gasolene and electric motors? If he knew no more than he does now he would be helpless, and have to accept any sort of absurd excuse the truckmen might give for being unable to "back up" or "slew around." Perhaps in the near future some questions on practical automobiling will be included in the Civil Service examination for policemen.

In sacrificing everything to the high speed some makers produce cars that are noisy and disagreeable when going slowly. In ignoring this they seem to loose sight of the fact that cars cannot always be driven on the high gear. In city driving particularly this is true, and a noisy car will attract more attention there than any other place.

As the costliness of the horse, no less than his lack of efficiency, becomes better known by reason of the more extended use of the self-propelled vehicle, he is certain to be regarded as a luxury instead of, as now, a necessity.

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DETROIT SHOW OPEN

Music, Motor Cars, Dogs and Sporting Goods Comingle and Draw Good Crowds.

Detroit, Feb. 9.—The second annual Automobile and Sportsman's Show opened to-night to the strains of the Metropolitan Orchestra and the baying of the dogs that comprise the Bench Show, which is included in the affair.

The decorations, generally speaking, are tasteful, and with cars, dogs, guns and the like in evidence it cannot be said that the show lacks variety or that there is not plenty to be seen.

The crowd that is in attendance to-night argues well for the week.

The exhibifors are as follows:

AUTOMOBILES.

The Oldsmobile Co., Detroit, W. C. Rands & Co., managers, had their brougham that attracted so much attention at the New York and Cleveland shows, their new touring car and, last but not least, their regular runabouts. Their booth was always crowded, and W. C. Rands, Roy Chapin and James Brady, with a corps of assistants, were kept busy.

W. E. Metzger, Detroit, had one of the largest exhibits, comprising the Winton, Cadillac, Toledo, Peerless, Baker, Waverly and Columbia cars. Besides Mr. Metzger, Messrs. Riggs, Newman, Brady and Hurlburt were on hand to take care of visitors.

J. P. Schneider, Detroit, showed the new models of the Elmore, Northern, National and Marr autocar. One of the features of the exhibit was the Northern racer, in which Mr. Maxwell, of the Northern Co., turned a somersault at the Grosse Pointe races.

W. H. Weber, Detroit, had his new lines, comprising the Searchmont, Conrad, Orient and Rambler. The Orient buckboard came in for lots of attention. The Searchmont medals for reliability were also shown.

White Sewing Machine Co., Detroit, had two of their regular model runabouts and their new steam touring car. They were all in white, as usual; they reported the first sale of their touring car in Detroit to H. S. Pingree, son of the late Governor of Michigan. Mr. Robinson and Messrs. Grant and Wright were in charge.

Wheeler Mfg. Co., Detroit, a newcomer in the auto world, exhibited a touring tonneau and runabout. It can be said truthfully that their designer and builder has started right, for two neater looking cars have never been shown.

Kirk Mfg. Co., Toledo, Ohio—The Yale has been so favorably commented on that little remains to be said. This car always draws, and Mr. Kirk's rotund face is always smiling. Mr. Bragg is also on hand to assist Mr. Kirk.

Flint Automobile oC., Flint, Mich., are showing their Roadster model. Mr. Hardy and Mr. McPhillips are always on hand dwelling on its merits.

Jackson Auto Co., Jackson, Mich.—The Jaxon steamer, a clever machine, reflecting a great deal of credit on B. J. Carter, its designer, who is in attendance.

The Autocar Co., Ardmore, Pa.—This company, through its Chicago agent, F. P. Illsley, showed two cars of this popular make. The booth was always surrounded by an admiring crowd.

Sandusky Automobile Co., Sandusky, Ohio, had their sign up with a card stating to ask the R. R. man. Their car is expected to arrive to-morrow.

The Ide-Spomeg-Huber Co., Detroit—This firm showed the built over News-Tribune electric delivery wagon. They have put a four cylinder upright engine into it, so it can carry its papers all over the city.

Tom Cooper's "999" is shown, and this always has a crowd of the curious around it.

AUTOMOBILE ACCESSORIES.

Fisk Rubber Co., Detroit Branch, showed a complete line of single and double tube automobile tires. The latter is the one that created so much comment since its introduction. Its merit is apparent at a glance, and its success is positive. Manager Broadwell and his assistants, Messrs. Lutz, Lambe and Kerchoffer, were in charge.

Twentieth Century Mfg. Co., New York—What would a show be without "Governor" Castle and the 20th Century lamps? All styles are shown, of course.

Hussey Auto & Supply Co., Detroit, are showing their well known radiators, tilting wheels, running gears, etc., and, naturally, that old timer, P. L. Hussey, is in charge.

Briscoe Mfg. Co., Detroit—This firm are showing their radiating coils, tanks, etc.

B. F. Goodrich Co., Akron, show their complete line of pneumatic and solid tires, in addition to part of their art gallery, with the beautiful Kate and Aida.

Diamond Rubber Co., Akron, Ohio, show their solid, single tube and clincher tires, and of course their now famous "non-blooming" inner tube. Mr. Perrett and Mr. Snyder are in attendance.

Those who show sporting goods are as follows: The Fletcher Hardware Co., Union Metallic Cartridge Co., Winchester Arms Co., Marlin Arms Co., Hunter Arms Co., A. J. Reach & Co. and Jas. A. Marks Co.

Gas engines and launches were shown by Charles A. Strelinger Co., A. L. Melvin, Truscot Boat & Launch Co., Bloomstrom Launch Co., M. Dingfelder and L. C. Steers.

Florida Speed Trials Likely.

It seems to have become a settled fact that there will be a series of straightaway races on the Florida Beach at Ormond during the week of March 9. The Florida Automobile Association, projected at the time of the New York show, has been successfully organized, the railroads and hotels of Florida have stepped forward to help, and the plan now appears to be assured of success.

W. J. Morgan, the father of the scheme, and W. J. Stewart, chairman of the Race Committee of the Automobile Association, are now in Florida having the course surveyed and attending to the necessary preliminaries.

MAY BECOME DEMOCRATIC

A. A. A. Directors Sensibly Consider the Logical Enlargement of Their Organization.

There is a prospect of serious rivalry and perhaps a clash between the American Automobile Association and the American Motor League, which were organized during the same week a little less than a year ago at Chicago. The clash, however, if it comes, is apt to be something like the meeting of a trolley car with a peanut on its tracks, the League in this case being the peanut.

Promise of the conflict is found in the idea that has come into the head works of the A. A. A., to extend the scope of the organization by admitting individuals to membership.

When the A. A. A. was formed it was laid out on the basis of a federation of clubs, and it has clung to that idea ever since. It has taken the control and regulation of the sport, and grown in power and wealth. In order to increase its popularity and let in the little clubs, the dues recently were reduced from $3 a head to $1 a year for every member in the clubs belonging to the organization.

The American Motor League may be said to have been started in direct opposition to the American Automobile Association, on the theory that the A. A. A. would be an aristocratic and exclusive body that would be dwarfed by a popular, democratic organization formed on the basis of unit membership, open to all, whether club members or not. The League has done nothing beyond theorize, however, and now the body that has waxed strong threatens to open its doors to individual members the same as the A. M. L.

This was the chief theme of discussion at the regular monthly meeting of the directors of the A. A. A., held on Tuesday at the Automobile Club. Of course, the directors could take no positive action in the matter, for it would necessitate a change in the constitution that would have to be voted upon by the members at a general meeting. There was enough sentiment in favor of it, however, for instructions to be given to the secretary to investigate and see what changes in the constitution and bylaws would be necessary for the association to admit individual members and establish them and the clubs on an equitable voting basis. This is the attitude which the Motor World recommended the A. A. A. to take at the time of its formation.

Dr. Julian A. Chase, of the Rhode Island Automobile Club, the new president, occupied the chair at the meeting, and others present were W. E. Scarritt, representing the Automobile Club of New-Jersey; A. R. Pardington, Long Island Automobile Club, and Harlan W. Whipple, Automobile Club of America.

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Commentary

Suppose you may have seen in the papers that they had a railroad accident over in New Jersey recently which resulted in the deaths of a number of passengers. The accident is believed to have been the result of the engineer of the colliding train passing a danger signal without seeing it, because he was at the moment of passing it attending to a leaking valve or something else of the same kind. With so excellent an opportunity to do something for "the peepul," one of the yellow papers has introduced a bill in the New Jersey legislature which aims to make railroads in future employ two engineers on each locomotives. If such a law is passed you may expect the same idea to be extended until the automobilist of the future will be compelled to employ two licensed chauffeurs each time he goes upon the public thoroughfares. The argument the yellow paper makes for the necessity of two engine drivers can be made to serve equally well when employed against the automobile; besides, just see what a glorious opportunity this affords for a blatherskite legislator to win at one swoop the eternal gratitude of the horseman, the farmer and the chauffeur!

* * *

When you fear something is going to happen to yourself or to the vehicle you are riding in, remember trouble is like money—it is better to save it than to borrow it.

* * *

What is the matter with the city of New York? What does it mean by neglecting the comfort of the owners of several thousands of trotting horses of varying degrees of speed? After spending a beggarly $6,000,000 for a speedway for the sole use of these citizens and their trotters, the city has now neglected to keep that miserable little concession to the most cultured and modest of its citizens in a way entirely satisfactory to them. What matters it if the city is short handed, and that the common, ordinary citizens are forced to go without proper street cleaning, etc.? Is that any reason why the city should neglect the pleasure and comfort of the trotting-horse owner, by not seeing to it that his especial roadway is swept and kept according to his liking? Well, I wot not! Vide this complaint from "An Oldtime Road Driver" in a Saturday evening paper:

"Instead of being maintained in its proper form, the Speedway to-day is a disgrace to the city, and unless some improvement is soon made it will be the means of driving to other places the horsemen from this and other cities who have made it a practice of visiting the Speedway daily."

Could any greater calamity befall New York than that it should be boycotted by the owners of trotting horses because the city had neglected to spend a few more millions for the trotters' exclusive benefit? Now, if it was the owners of automobiles—but why mention such intruders when one is dealing with the only thing which has any right at any time upon any road, the trotter?

* * *

I've great faith in the ability of the ground hog to foretell what the length of the winter is going to be. It is not necessary for me to explain why I have this faith, because you wouldn't understand it if I did. Suffice it to say that a week ago Monday the ground hog over in The Bronx came out of his cyclone cellar, looked around for his shadow, failed to see it and at once returned to his cellar, with the certainty that in six short weeks from that day spring will have sprung. Now you are warned, don't wait to order that new vehicle you've been thinking about buying, or, if you won't do that, send your old one to the factory and have it put in apple-pie order, because you'll need it, remember, in about only a month's time from when you read this.

* * *

Somehow it seems as if the more valuable experience the owner of a motor vehicle accumulates, the less energy and inclination he has to make use of it.

* * *

Should you chance to see any fashionably dressed gentleman proceeding on his way looking extremely miserable, though wrapped up in the heaviest of garments, don't pity him until you know what ails him. The chances are he is only experiencing an imaginary "motor chill." This is the very latest fashionable complaint, and was first introduced only last week by King Edward, who is said to have caught one from riding in an open motor car while wearing only a light overcoat. The result of Albert Edward's imprudence was a "motor chill," and so those in this country who look upon him as the arbiter of all fashion and elegance are now suffering from the same complaint, though in most cases the only motor car they have ever ridden in is the kind which has a bell at each end with a conductor and motorman in between.

* * *

When it comes to capturing a race like the one for the Gordon Bennett Cup promises to be this year, add a "p" to luck and you have the true secret of the winner's success.

* * *

I know a man who holds the responsible position of private secretary to a millionaire, and he tells me this: An inventor, who, by the bye, always wants it to be known that he is a "scientific discoverer," applied to the millionaire for aid to perfect and place upon the market an automobile which was to be something miles in advance of anything yet devised in the motor vehicle line. Now the millionaire was like most of his kind, an owner of several automobiles, and was the possessor of a very fair working knowledge of the construction of each of them, but when he came to read the specifications of the new scientific discovery he was asked to play angel for he could not make either head or tail thereof. As much as he could understand was that the chief claim was for a wonderful transmission which delivered 100 per cent of the power given to it by the motor. But even this claim was so obscured by the quasi-scientific terms employed by the "discoverer" in his description of it that the secretary was told to write the seeker after funds and ask him to be a little bit more explicit in his claims. Evidently the "discoverer" was not pleased, for his reply was that "the ultimate and persistent characteristic and potency of all the combined terms I have used in describing my grand discovery is pervasive reciprocal modification, without regard to specific affinities and influences superimposed upon their fundamental attitude and operation." This is where the case stands at the time this is written. What it all means no man knoweth, not even the "scientific discoverer" himself, I believe.

* * *

Get into an argument with a rabid motorphobe and you will find him absolutely without either reason or common sense when he is brought face to face with the unquestioned good points of a mechanically propelled vehicle. In him you will see the living evidence that no man is quite so obstinate as the man who knows he is in the wrong. The mule's kick is nothing but a protest against his family, but he can upset a belted earl if he is given a fair chance, and there's a deal of satisfaction in that.

* * *

In looking over the advertisements in a Sunday paper I ran across this one:

"Automobile leather and silk for the smart set; made any design. Automobile."

The vagueness of this excited my curiosity, so I wrote to the advertiser saying I had long wanted something of this very kind, but never knew where to get it until I had seen the advertisement, but as an evidence of good faith, and not necessarily for publication, I asked him to mail me a few particulars. When I had done this I forgot all about the thing. Coming home a few days later the servant informed me that the man had been there to measure me. I could not learn from her what man it was, nor what I was to be measured for. All she knew was that a man was bent on taking a measure of me. The next night a visitor came, and when he was shown in he deposited a pack the size of a load of hay on the floor, and before I could stop him had taken from it the wildest collection of alleged garments you ever saw. In a language which I suppose he thought was English he informed me that he was prepared to measure me there and then for any of the automobile garments I saw before me. I felt kind of sorry for the fellow because I really never meant him to be put to all the trouble he had, so I questioned him about his business, and he informed me that my reply was the only one he had received to his advertisement. I was not astonished at this, but as a sort of salve to my own conscience I wrote him an intelligent advertisement and inserted it at my own expense. THE COMMENTATOR.

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NOW FOR CHICAGO'S SHOW

Most of the Exhibits Duplicates of Those at New York but Several New Western Cars Will be in Evidence, One at Least of Much Promise — Friction Drives a Conspicuous Feature — The Exhibitors, Their Wares and Locations.

Undoubtedly the Chicago show, which opens on Saturday next, will be a great function from the Western standpoint. From the Eastern point of view, and the viewpoint of the manufacturing trade, its glory and much of its interest have been dimmed by the New York show that went before, and it cannot, perforce, be "writ large," or at least as large as would otherwise be the case.

With few exceptions the cars and accessories that will be shown in the Coliseum are no longer new. Their every part and feature has been exhibited and is known and has been dilated on.

Of the exceptions few are large or important. Indeed, most of them are unknown or practically unknown, and are the product of Western concerns who, so to speak, will make their debut at Chicago. In all there will be fifty exhibitors at the Western show who were not represented at New York. Of the number but fifteen are manufacturers of cars, and of the remainder several are merely local or territorial agents.

Of the fifteen only the Woods Motor Vehicle Co., Friedman Automobile Co., St. Louis Motor Carriage Co., Fanning Mfg. Co. and the Buffalo Electric Vehicle Co. are of long establishment and are the only ones whose names and fame have penetrated far beyond their local confines. Of the others nearly all are of limited resource and capacity, and have yet to win their spurs. J. C. Brandes, with his German Cudell cars that did not arrive in time to be shown at New York, will be able for the first time to display and introduce them to the American public, and of the other newcomers the Wisconsin Wheel Works, of Racine, whose Mitchell bicycles and motor bicycles are known to fame, and who have a big factory and a plenitude of William Mitchell Lewis money behind them, is likely most deeply to impress those who go below mere appearances and who do not judge things from one car, a sign and a decoration of colored bunting. It is known that the Wisconsin people have something new not only in motor bicycles, but in the line of popular priced motor cars that promises to prove a revelation as to price, construction and appearance.

While to those who visited or digested the New York show, the Chicago affair will lack novelty, all of the cars that made the Eastern event notable will be in evidence for Western gaze and inspection. There is not more than one notable car absent. To mention them would be to call the roll of the entire trade, and if the magnificence and impressiveness of such an aggregation of touring cars does not quicken the Western pulse and heighten the demand for more than the popular priced runabouts, to which the Western folk have so strongly inclined, then the Western pulse—or pocket—must be in a bad way.

The attendance at the show also should prove in the nature of an index to the real extent of the West's awakening and interest in automobiles. It is regrettable, but it is nevertheless a fact, that none of the previous shows at Chicago attracted the numbers that were their due.

Viewed from this distance at this time, it cannot be said that, coming after New York, the Chicago show, whatever its influence locally and territorially, will add much, if anything, to the information of the trade or general public. The presence of three cars propelled by friction drives, the Friedman, the Union and the Swift-Marble, stand out as the most distinguishing feature of the show, and the one in which it differs most from New York. But the principle of the friction drive is not new, and the cars in question will interest chiefly because they are unlike the vast majority.

Excepting the Wisconsin Wheel Works car, which has never been seen or shown, it would seem that surprises or developments, if any are discoverable, must be sought for and dug out of the mass of smaller things that will be displayed by the thirty-odd exhibitors of parts, sundries and accessories whose wares were not displayed in New York.

The exhibitors who did not show at New York are as follows:

Spaces 17 and 18, Woods Motor Vehicle Co., Chicago—Woods electric vehicles.

Space 29, J. C. Brandes, New York—Cudell gasolene cars, made by Cudell & Co., Aix la Chapelle, Germany; motorettes, touring cars, delivery wagons and trucks.

Space 30, Fanning Mfg. Co., Chicago, Ill—Fanning electric vehicles, and also a new gasolene car.

Spaces 49 to 52, Ralph Temple & Austrian Co., Chicago, Ill.—Standard Motor Vehicle Co.'s line of Standard cars, embodying several new features.

Spaces 77 and 78, Friedman Automobile Co., Chicago—Friedman gasolene runabout, with friction drive.

Spaces 97 and 98, Eckhart Carriage Co., Auburn, Ind.—Gasolene cars.

Space 99, Marble-Swift Automobile Co., Chicago—Marble-Swift gasolene car, with a novel form of friction drive, employing two discs instead of one.

Spaces 101 to 103, Wisconsin Wheel Works, Racine Junction, Wis.—Mitchell motor bicycles and a new gasolene car.

Space 107, Pittsburg Reduction Co., Pittsburg, Pa.—Aluminum specialties.

Spaces 108 and 109, Jackson Automobile Co., Jackson, Mich.—Jaxon steam cars, having three cylinder engines of novel construction.

Space 111, Chelsea Mfg. Co., Chelsea, Mich.—Chelsea cars.

Spaces 116 and 117—Louis M. Grant, Chicago.

Spaces 118 and 119, Columbus Motor Vehicle Co., Columbus, O.—Columbus gasolene cars.

Space 137, Briscoe Mfg. Co., Detroit, Mich.

Space 143, Carl Fisher, Indianapolis, Ind.—Storm aprons, etc.

Spaces 146 and 147, K. Franklin Peterson, Chicago—Cleveland-Canton Spring Co., Canton, O., springs.

Spaces 148 to 151, P. J. Dasey & Co., Chisago—Western Motor Co., Logansport, Ind., Rutenber gasolene motors.

Space 152, Brecht Automobile Co., St. Louis, Mo.—Running gears and automobile parts of all kinds.

Space 157, Motor Development Co., Chicago.

Space 158, Warren Differential Gear Co., Muncie, Ind.—Warner spur differential gear, made in four sizes.

Space 159, Barton Boiler Co., Chicago—Flash boilers.

Space 161, Porter Storage Battery Co., Chicago—Porter storage batteries.

Space 162, Speedwell Automobile Co., Milwaukee, Wis.—Speedwell gasolene cars.

Space 163, John F. McCanna Co., Chicago—Mechanical oiling machines.

Space 164, American Gasolene Motor Co., Chicago—Transmission gears.

--Tanks, mufflers, coolers, etc.

Space 166, Bartholomew Co., Peoria, Ill.—Glide gasolene cars.

Space 167, Flint Automobile Co., Flint Mich.—Roadster gasolene runabouts.

Space 167, Imperial Wheel Works, Flint, Mich.—Imperial wheels.

Space 168, T. L. Tincher, Chicago.

Space 169, Chicago Motor Cycle Co., Chicago—Caloric hot air engines and vehicles.

Space 170, St. Louis Motor Carriage Co., St. Louis, Mo.—St. Louis gasolene cars.

Space 171, Wagner Cycle Co., St. Paul, Minn.—Wagner motocycle.

Space 172, Standard Anti-Friction Equipment Co., New York—Be-no-ca tires.

Space 173, Mead Cycle Co., Chicago—cycles.

Space 174, Waterloo Gasolene Engine Co., Waterloo, Iowa—Gas engines and Duryea gasolene cars.

Space 175, Union Automobile Co., Union City,

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Ind.—Union gasolene cars, with a friction drive that has been favorably commented on.

Space 176, Chicago Storage Battery Co., Chicago—Storage batteries.

Space 178, Standard Carriage Lamp Co., Chicago—Lamps.

Space 179, Irwin, Tennant, Springfield, Ohio.

Space 180, G. W. Russell, Springfield, Ohio.

Space 182, Kammann Mfg. Co., Chicago.

Space 185, Racine Boat Co., Racine, Wis.—Launches.

Space 186, Buffalo Electric Vehicle Co., Buffalo, N. Y.—Electric vehicles.

Space 187, Lozier Motor Works, Plattsburg, N. Y. — Lozier gasolene motors and launches.

Space 188, Westerfield Motor Co., Anderson, Ind.—Gasolene motors.

Space 193, Western Storage Battery Co., Indianapolis, Ind.—Storage batteries.

The following concerns which exhibited at New York will also show at Chicago:

Spaces 1 to 4, Winton Motor Carriage Co., Cleveland, Ohio—Winton gasolene cars.

Spaces 5 to 8, Pardee & Co., Chicago—Packard, American and Centaur gasolene cars.

Spaces 9 and 10, F. B. Stearns Co., Cleveland, Ohio—Stearns gasolene cars.

Spaces 11 and 12, Geo. N. Pierce Co., Buffalo, N. Y.—Pierce and Arrow gasolene cars.

Spaces 13 and 14, Studebaker Bros. Mfg. Co., South Bend, Ind.—Studebaker electric vehicles.

Spaces 15 and 16, Peerless Motor Car Co., Cleveland, Ohio—Peerless gasolene cars.

Spaces 55 and 56, General Automobile & Mfg. Co., Cleveland, Ohio—General gasolene cars.

Spaces 19 and 20, E. R. Thomas Motor Co., Buffalo, N. Y.—Buffalo gasolene cars.

Spaces 21 to 24, Electric Vehicle Co., Hartford, Conn.—Columbia electric and gasolene cars.

Spaces 25 to 28, Locomobile Co. of America—Locomobile steam and gasolene cars.

Spaces 31 and 32, Apperson Bros. Automobile Co., Kokomo, Id.—Apperson gasolene cars.

Spaces 33 and 34, Lindsay Automobile Parts Co., Indianapolis—Running gears and parts.

Spaces 35 and 36, Fredonia Mfg. Co., Youngstown, Ohio—Fredonia gasolene cars.

Spaces 45 and 46, Knox Automobile Co., Springfield, Mass.—Knox gasolene cars.

Spaces 47 and 48, Elmore Mfg. Co., Clyde, Ohio—Elmore gasolene cars.

Spaces 49 to 52 and 65 to 68, Ralph Temple & Austrian Co., Chicago—U. S. Long Distance, Franklin, C., G. & V. and Panhard gasolene cars.

Spaces 53 to 56 and 69 to 72, International Motor Car Co., Toledo, Ohio—Toledo steam and gasolene and Waverley electric cars.

Spaces 57 and 58, Olds Motor Works, Detroit, Mich.—Olds gasolene cars.

Spaces 59 and 60, Haynes-Apperson Co., Kokomo, Ind.—Haynes-Apperson gasolene cars.

Spaces 61 to 64, Cleveland Automobile Co., Cleveland, Ohio—Cleveland gasolene cars.

Spaces 75 and 76, Moyea Automobile Co., New York—Moyea gasolene cars.

Spaces 79 and 80, Prescott Automobile Co., New York—Prescott steam cars.

Spaces 81 and 82, Sidney B. Bowman, New York—La France and Panhard gasolene cars.

Spaces 83 and 84, Frank P. Illsley, Chicago—Autocar and Northern gasolene cars.

Space 85, Shelby Motor Car Co., Shelby, Ohio—Shelby gasolene cars.

Space 86, J. Stevens Arms and Tool Co., Chicopee Falls, Mass.—Stevens-Duryea gasolene cars.

Spaces 87 and 88, Thomas B. Jeffery, Kenosha, Wis.—Rambler gasolene cars.

Spaces 89 and 90, National Motor Vehicle Co., Indianapolis, Ind.—National electric vehicles.

Spaces 91 and 92, Cadillac Automobile Co., Detroit, Mich.—Cadillac gasolene cars.

Spaces 93 and 94, Brandenburg Bros. & Alliger, Chicago—Parts and fittings.

Spaces 95 and 96, Matheson Motor Car Co., Grand Rapids, Mich.—Matheson gasolene cars.

Space 100, Kirk Mfg. Co., Toledo, Ohio—Yale gasolene cars.

Space 106, Hartford Rubber Works Co., Hartford, Conn.—Hartford, Dunlop and Turner tires.

Space 110, Crest Mfg. Co., Cambridge, Mass.—Crestmobile gasolene cars.

Spaces 112 and 113, Conrad Motor Carriage Co., Buffalo, N. Y.—Conrad gasolene cars.

Spaces 120 and 121, Jones-Corbin Co., Philadelphia, Pa.—Gasolene cars of handsome appearance and novel runabout design.

Space 122, Electric Contract Co., New York—Steam gauges, speedometer lights, etc.

Space 123, Electric Storage Battery Co., Philadelphia, Pa.—Exide storage batteries.

Space 124, Veeder Mfg. Co., Hartford, Conn.—Veeder odometers and tachometers.

Space 125, Shelby Steel Tube Co., Pittsburg, Pa.—Shelby weldless steel tubing.

Space 126, Firestone Tire & Rubber Co., Chicago—Firestone solid rubber tires.

Space 127, Whitney Mfg. Co., Hartford, Conn. — Whitney Standard and Wizard chains.

Space 128, Standard Welding Co., Cleveland, Ohio—Standard electrically welded tubing and parts.

Space 129, Grey & Davis, Amesbury, Mass.—Lamps.

Space 130, Joseph Dixon Crucible Co., Jersey City, N. J.—Lubricants.

Space 131, Rose Mfg. Co., Philadelphia, Pa.—Lamps.

Space 132, Timken Roller Bearing Co., Canton, Ohio—Timken roller bearings.

Space 133, 20th Century Mfg. Co., New York—20th Century oil and acetylene lamps.

Space 134, Fisk Rubber Co., Chicopee Falls, Mass.—Fisk single tube and detachable tires.

Space 135, Brennan Mfg. Co., Syracuse, N. Y.—Brennan gasolene motors.

Space 136, R. E. Dietz Co., New York—Lamps.

Spaces 139 and 139, Hoffman Automobile Mfg. Co., Cleveland, Ohio—Hoffman gasolene cars.

Spaces 140 and 141, B. F. Goodrich Co., Akron, Ohio—Goodrich detachable and single tube tires.

Space 142, Badger Brass Mfg. Co., Kenosha, Wis.—Solar acetylene automobile lamps.

Spaces 144 and 145, G & J Tire Co., Indianapolis, Ind.—G & J detachable tires.

Spaces 146 and 147, Franklin K. Peterson, Chicago—Baldwin chains, Brown-Lipe gears, American roller bearings, Midgeley tubular wheels.

Spaces 148 and 151, P. J. Dasey Co., Chicago—Dow coils and spark plugs, Apple igniters, Champion gears, Rutenber motors and Salamandrine boilers.

Space 153, Diamond Rubber Co., Akron, Ohio—Diamond single tube and detachable tires.

Space 154, Merkel Mfg. Co., Milwaukee, Wis.—Merkel motor bicycles.

Space 155, National Carbon Co., Cleveland, Ohio—Columbia dry batteries.

Space 156, Westinghouse Co.'s Pub. Dept., Pittsburg, Pa.—Westinghouse electric charging apparatus.

Space 158, Muncie Wheel & Jobbing Co., Muncie, Ind.—Bann-Auto patent wheel.

Space 160, H. W. Johns-Manville Co., New York—Asbestos specialties.

Space 165, Pope-Robinson Co., Hyde Park, Mass.—Pope-Robinson gasolene cars.

Space 177, H. B. Wick & Co., Youngstown, Ohio—Wick gasolene cars.

Space 181, Searchmont Automobile Co., Philadelphia, Pa.—Searchmont gasolene cars.

Spaces 183 and 184, American Darracq Automobile Co., New York—Darracq gasolene cars.

Space 189, E. J. Willis, New York—Motors and parts and Herz spark plugs.

Space 190, Motsinger Device Mfg. Co., Pendleton, Ind.—Auto-sparkers.

Space 191, Sandusky Automobile Co., Sandusky, Ohio—Sandusky gasolene cars.

Space 192, A. H. Funke, New York—Kelecom motors, Autolyte lamps, horns and spark plugs.

Good Roads on a Great Scale.

Arrangements have been practically completed for the Good Roads convention which will be held at Chicago on February 20. The preparations are on a most extensive scale. The immense Auditorium has been engaged, and 20,000 people are expected to attend. Invitations for seats on the platform have been sent to 2,000 people, among them being nearly everybody of prominence politically or officially in the country. Beginning with President Roosevelt, the list goes down through Congressmen, State legislators, municipal officials, editors, railway officials, etc. The list of invited speakers includes Congressman Brownlow, of Tennessee, introducer of the Brownlow Good Roads bill; Secretary Leslie M. Shaw, Senators M. A. Hanna and Chauncey M. Depew, General Nelson A. Miles, Sir Wilfrid Laurier, the Canadian Premier; President W. H. Moore of the Good Roads Association and Colonel Albert A. Pope.

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AN AUTOMOBILE AIR SLED

Not an Irridescent Dream But a Craft That Really Motes and Totes.

It has been the subject of quip and jest and has been joked about in the comic papers ever since the donkey cart began to be held up for a laugh as a "horseless carriage," but it is actually here at last—the ice automobile

It is not the dream of a demented garret inventor either, but a very practical contrivance based upon sound scientific principles, and mechanically well constructed. It is something that really promises a solution to the problem of transportation in the Frozen North.

It does not travel upon wheels, but, like an iceboat, goes upon runners. It is driven, like an airship, by a screw propellor, beating against the air, and this in turn is operated by chain and sprocket transmission of power from a De Dion motor, like an everyday, respectable automobile.

Hearing of the combination of such things as airship, iceboat and automobile, one would naturally be led to expect a foolish "freak," but this new vehicle seems to have all the essential qualities of a successful invention for practical use. It goes and it carries passengers. Only one model has been made, but this has carried three full grown men at the rate of fifteen miles an hour about a lake with only a 2¾ horsepower motor.

The combination creation is the product of J. B. Macduff, a staid, middleaged Scotchman, who has invented various successful machines and is now in the real estate business in Brooklyn. It was an idea worked out in his leisure time. He is not filled with big ideas about it, and patents were not taken out until it was found that it would actually "mote" and some of the possibilities of it were conceived. After it had been tried and proven Mr. Macduff christened it the "pneumoslito," meaning air sled, slito being the German term for sled.

The original model was a little triangular affair, with two propellors run by an electric motor. The trial horse, so to speak, is a car that has a platform twelve feet long by four feet wide, one propellor four feet in diameter and a 2¾ horse-power De Dion motor. This was built for Mr. Macduff by A. K. Schaap, in his automobile repair shop at 1,740 Fulton-st., Brooklyn, and was completed only a couple of weeks ago. A general view of it is shown in the accompanying cut made from a photograph of it taken while it was in use on the ice of a lake at Ridgewood, L. I. The floor of the body is made of stout wooden slat work, and a narrow plank seat runs from the motor and propellor to the front end, where the steersman sits astride the plank and guides the craft by means of an ordinary pair of bicycle handlebars. The flooring is mounted upon four big wooden skates, with steel blades in them, and the front pair are constructed so as to respond to the steering gear independently of the body. Levers for the sparking, the mixer and the clutch are within reach of the steersman, who sits with his legs protected behind a wind shield, shaped like a plough. The propellor is mounted in a frame above the motor, and is connected by a chain and sprocket gearing, geared one to three. The four blades of the propellor are rimmed at the periphery by a flat band of their own width, which is riveted to the blades, and revolves with them. This outer rim and the shape of the blades or pitch of the screw are the vital features of the construction, and hold the secret of the successful operation of the machine. According to the inventor the construction prevents the waste of any particle of air, every bit of atmosphere which comes in contact with the propellor being utilized for propulsion.



In getting under way the motor is started at slow speed, and the clutch thrown in. The propellor begins to revolve slowly, and gradually gains headway. When it has attained a certain velocity of revolution the pneumoslito starts slowly, and it gains headway as the propellor does, until the maximum velocity of revolution has been reached, which in the case of this trial machine is 500 revolutions per minute. It is impossible to start the craft with a jerk, and if the motor is simply stopped the vehicle will come to a stop gradually and gently. A brake is provided, however, that enables the operator to bring the car to a stop in a very short distance.

Mr. Schaap, when he built the machine to specifications, was frankly sceptical as to its ever being able to move itself, but he has ridden on it since then, and he now talks about it more enthusiastically than the inventor himself. He says that when it was tried on the lake at Ridgewood it seemed to make no difference whatever whether there were two or three or half a dozen persons on it. It was run at the rate of about fifteen miles an hour, and it is the opinion of Mr. Schaap that twenty miles an hour can be attained with it. When asked about running against the wind or crossways to it, Mr. Schaap remarked:

"Now that is one of the many pecuriar thing about the affair, and there are a lot of queer phases to it. It seems to run just about as fast across or into the wind as against it, but when it goes into the wind the number of revolutions increase, and the motor runs faster. Another odd thing is that the propellor does not draw the air through it, but seems to cut it out in chunks and hurl it backward from it."

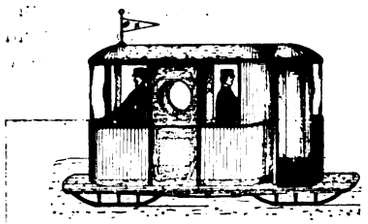
The latter remark was demonstrated to a Motor World man by setting the motor and propellor in motion as the machine stood on the floor. Behind the propellor there was a strong but fitful draught, as if the air truly was being thrown backward in lumps, but on the forward side of it there was no perceptible suction.

The Motor World man found Mr. Macduff busy with his real estate affairs, at 1,367 Broadway, Brooklyn. He is a quiet, untalkative man, seemingly wanting in enthusiasm. He was asked what he proposed to do with his "air-sled," and replied:

"Well, if I get time, I would like to take it up on the Hudson, where I could try it for a mile straightaway. If I don't do this I will take it up to Lake Hopatcong, where I have a place, and run it on the ice there. This is a very crude affair, though, and I

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have designs drawn for two others, with steel propellor blades, one with an eight horse-power motor and another with two big motors and two propellors. This model has wooden screw blades, metal bound, or armored, as you might say. The pitch is about right, though, and the rim works just as it should, economizing every bit of air. If Stevens had a propellor like that on his airship it would work differently. That propellor will do three or four times the work that any of those used on any air-

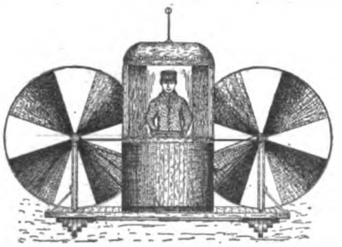


AS A CAR—SIDE-VIEW.

ship yet made will do. All my ideas are not worked out in this machine though. Surprised to find that it would run, were you? Well, I suppose that it because it is new to you. There is no reason why it shouldn't run. I knew it would as soon as I had time to have one built. No, I never built anything in the airship line before, but that can be done, now that motors have been so well developed. I have made a number of inventions in machinery, and this is an idea I have had for a long time. Those other drawings, of the boat and the car are just different adaptations of the idea, but I haven't had them built yet."

"What do you propose to do, just make them for pleasure purposes, the same as iceboats?"

"They are good enough for pleasure, but there is a more practical side to them. I am investigating the conditions of travel up north, where there are seas of ice all the year around. There is the Yukon River frozen solid eight months in the year. There is no reason why the pneumoslito should not be introduced and made to revolutionize travel in countries of that sort. They will haul passengers and freight in a couple of



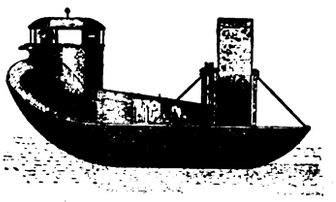
FRONT VIEW.

hours further than dogs can take them on sleds in a day's journey. As I have said, I am investigating the conditions of travel in the icebound regions, to see what the difficulties are and what facilities there are for craft of this sort. There are thousands of miles of frozen rivers and lakes in the north we know, and lines of travel now closed could be opened and maintained over tracks made ready by Nature, connecting many cities and towns by air-sled rapid transit."

"Will it travel against a stiff wind?"

"Well, you have seen how the air slides through it in front. Propellors run by ten horse-power motors would run at 1,200 revolutions a minute, and that is hurricane velocity. The air would have to be travelling faster than it does in a hurricane not to be caught and used by the propellors. The only trouble going against the wind will be the resistance offered by the body of the car and the passengers. The propellor offers no resistance, and there is almost a total absence of friction in running over ice. With the car built low and shaped to cut the wind there will be very little holding back by the wind."

"Why don't you organize a company to



AS A BOAT.

built them for practical purposes of transportation, as you suggest?"

"Well, I haven't got that far along yet. I haven't given much time to the matter, but all that will come in time."

The accompanying cuts show a side view of the car mentioned, with the propellors at the rear, a front view of the same and a side elevation of the boat, designed to be used in conjunction with the car in the open seas of the polar regions. In the photographic cut the propellor is running, and the machine is just getting under headway, and it will be seen by the way the overcoat of on the man in the rear is blowing that the sled is moving obliquely in the wind.

Sintz to Enlarge.

Plans are on foot to greatly extend the operations of the Sintz Gas Engine Co., which was removed from Grand Rapids to Detroit about a year ago. To carry out the plans the present capital stock of $65,000 will be increased and other Detroit capitalists interested. At the annual election of the company, recently held, Directors E. E. Barber and James Bayne, of Grand Rapids, who were active in the company before its removal, retired. Ora J. Mulford was succeeded as secretary by E. B. Finch.

Trying to Organize in Scranton.

Efforts are being made to organize an automobile company at Scranton, Pa. J. H. Brooks, A. P. Bedford, C. M. Florey and others are interested in the movement, the purpose being to conduct a general automobile business. The intention is to have a salesroom, livery and repair shop, and ultimately to possibly engage in the manufacture of automobiles.

Making an Effort in Attleboro.

Efforts are being made to organize a company at North Attleboro for the manufacture of gasolene automobiles. Capitalists in Providence, Pawtucket and Attleboro are said to be interested in the project. The factory may be located at Plainville, which is two miles from North Attleboro.

Raised Duty on Clement.

Reappraisements have been made on a number of the machines that were brought into the country at the time of the show and passed hurriedly through the Custom House. A. Clement is one the principal victims of the readjustment. One of the Clement 16-horsepower machines that was entered at 10,300 francs was advanced in value by Appraiser Whitehead to 11,200 francs, and this has been sustained by the Board of General Appraisers. There were similar advances on other machines, the total of increase in assessments amounting to $531.

Nelson Incorporates in Iowa

Among recent newcomers in the manufacturing field is the Nelson Gas Engine and Automobile Co. of Harlan, Iowa. Articles of incorporation for this concern, with a capital of $50,000, have just been filed with the Iowa Secretary of State.

Banker Leases a Building.

Largely increased facilities have been secured by A. C. Banker, the Chicago dealer. He has leased the six story and basement building at Nos. 456 to 460 Wabash avenue, and will hereafter use it for his entire business.

Toledo and Conrad cars will hereafter be handled by the H. J. Koehler Sporting Goods Co., Newark, N. J.

One More in Cleveland.

The Star Automobile Mfg. Co. is a recent addition to the number of Cleveland, Ohio, manufacturing concerns. It has just leased property at No. 184 Kinsman street. There it will build the Star gasolene car, an 8 horsepower single cylinder horizontal engine. The officers are H. H. Hodell, president; James A. Matthews, vice-president; W. A. Dutton, secretary and treasurer; G. R. Albaugh, superintendent, and J. H. Van Dorn and F. Schneider, directors.

New Station in Buffalo.

An automobile station has been opened at No. 59 Franklin street, Buffalo, N. Y., by the Centaur Motor Vehicle Co., of that city. A general agency business will be conducted, and all types of cars will be looked after. The station is entirely separate from the company's manufacturing department. Cadillac and Yale cars will be sold, and perhaps several other lines.

Indianapolis Show Abandoned.

Indianapolis dealers having been unable to find a suitable building in which to hold an automobile show, the project has been abandoned. The Fischer Automobile Co. will, however, hold a show of their own. Their new establishment, in North Illinois street, will be completed next month, and April 1 has been set for an elaborate opening.

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MERCEDES FEATURES

Despite Effort at Secrecy Some Details Leak out but They are not Strikingly Novel.

Profound secrecy has hitherto been preserved regarding the new Mercedes cars. The automobile world has been all agog over them, and rumors of various kinds have been circulated. Would they this year, as they did last, come forward with new features worthy of being extensively copied?

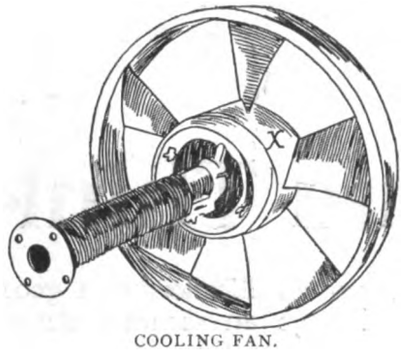
From the Allgemeine Automobil Zeitung comes the first illustrated details that can by any means be regarded as authentic. They are meagre enough, and touch on only a few features. As far as these go—with the exception of the readily removable intake valves—there is nothing revolutionary or even particularly startling in them.

Two models, i. e., a 60 and an 18 horsepower, are receiving much attention. In both the engine is of the four cylinder type, cast in pairs. A noticeable alteration is the placing of the inlet valves directly in the centre of the cylinder head. The valves are of unusually large size, as will be seen by a glance at Fig. 1, in which the valve in one cylinder is shown in place, while that of the other is lying on the ground. The inlet valves are mechanically operated, but the actual details of the arrangement adopted have not yet been made public. The placing of the inlet valvet in a central position is claimed not only to concentrate the force of the explosion on the piston, but leaves one side of the cylinder free for the magneto-ignition gear.

A new carburetter is being adopted; this is smaller than the 1902 pattern, and, while giving a perfect mixture, allows the motor to be run at even a slower speed than last year's type. Owing to the patents not yet being secured, no information with regard to its construction can as yet be given.

Passing now to the transmission mechanism, the clutch has been entirely remodelled. Figs. 2 and 3 show the arrangement so clearly that little description is necessary. The flywheel, it will be noticed, is still made in the form of a fan, while the clutch is of the expanding segment type. As the sleeve on which the male cone is mounted is pushed forward by means of the clutch pedal it is at the same time, by the action of spiral guides, given a rotary motion, this being conveyed through the toothed segments to the clutch, which is thus expanded or contracted as desired.

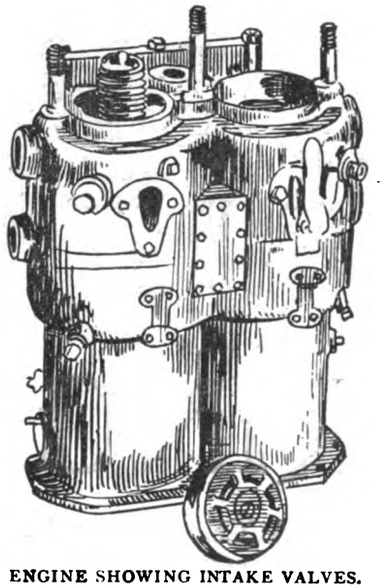
It is the intention of the Cannstatt concern to build a number of racing Mercedes cars. These will have four cylinder engines, developing 80 horsepower at a speed of from 1,000 to 1,200 revolutions a minute, the diameter of the cylinders being 177 millimetres by 150 millimetres stroke. The capacity of the cylinders in the 40 horsepower car is 1,640 cubic centimetres, in the 1903 60 horsepower car it is 2,052 cubic centimetres, and in the 80 horsepower racers 3,404 cubic centimetres; it will thus be seen that the motor of the new racer has a capacity of more than



COOLING FAN.

double that of last year's 40 horsepower vehicle.

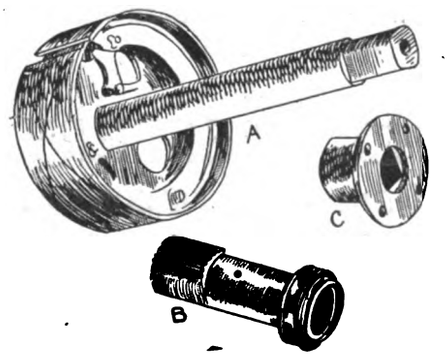
The weight of the frame, springs and axles has been further reduced, and at the same time the strength and rigidity of the same



ENGINE SHOWING INTAKE VALVES.

have been increased. The cooling surface of the radiator has been doubled by a new method of arranging the tubes without increasing the volume.

The 60 horsepower car will have four cylinders, the diameter being 140 millimetres by 150 millimetres, as compared with the 118 millimetre by 150 millimetre cylinders of the 1902 40 horsepower engine. In addition to the 60-horsepower car already referred to, an 18 horsepower vehicle is being introduced for the 1903 season; it will be fitted with a four cylinder engine, developing from 18 to 25 horsepower, the car, complete with tonneau body, weighing 750 to 800 kilos.



CLUTCH.

The frame will be, as in 1902, of the pressed steel type. The axles undergo a change, being T shaped instead of round. In view of the demand for Mercedes cars the Cannstatt company are making preparations for considerably increasing their output, and instead of building fifteen cars a month, as at present, they will soon be able to turn out forty.

Carburetters in Cold Weather.

If any difficulty is experienced with the carburetter during raw weather it will probably be remedied by bringing it closer up to the engine. In cases where it is placed at some distance away and low down a draught of a heavily laden moist atmosphere is drawn into the carburetter, and on its passage to the cylinder becomes dried to some extent and thus gets rid of the moisture contained in the air. This moisture, in the form of water, drops to the bottom of the carburetter, and in a short time accumulates sufficiently to interfere seriously with its working.

If the gasolene tank can be raised to a position high enough to feed the spirit by gravity to the carburetter a great advantage will be gained by shortening the pipe so as to bring the carburetter nearer to the heads of the cylinder, where, by the heat given off, the air becomes drier and more capable of taking up the spirit than a damp atmosphere. In making any conversion of this description it is always well to have all necessary curves made as broad as possible, avoiding all short bends, whereby the induction power of the motor is decreased, thus considerably affecting the power of the carburetter when of the jet spray type.

Morgan Talks Motor Trucks.

At Worcester, Mass., last week the Success Club of the Y. M. C. A. enjoyed a talk on motor vehicles. The speaker was Ralph Morgan, of the Morgan Motor Co., who confined his remarks to heavy vehicles for trucking purposes. He was listened to with close attention, and at the close the members of the club asked many questions regarding constructional details.

Waverley Touring Car Coming.

It is understood that the International Motor Car Co. is about to place on the market an electric tonneau car. It was not completed in time for the shows, but will make its appearance in a few weeks.

Wells no Longer With Prescott.

H. M. Wells is no longer with the Prescott Motor Carriage Co. He severed his connection with the Passaic concern several weeks ago.

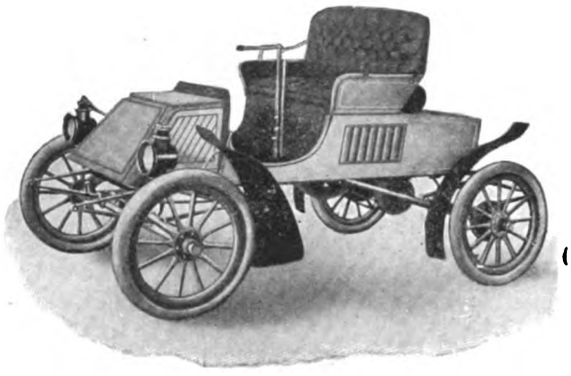
The Pioneer Automobile Co. will occupy the entire four floors of the building at No. 54 West Thirty-eighth street, this city.

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Stop and Think

of the necessary qualifications of a good automobile, and you will have an accurate description of the

Rambler



TOURING CAR

RELIABILITY—ACCESSIBILITY—SIMPLICITY are it's earmarks. You may pay more money but you cannot buy a better carriage than the Rambler for

$750.

Equal in service to the $2,500 kind, but a one-third the price. Our catalogue fully explains its merits; shall we send you one?

THOMAS B. JEFFERY & CO.,

KENOSHA, WISCONSIN.

Spaces 87 and 88 at Chicago Automobile Show.

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ROAD RACING RIVIVAL

Long Island Automobile Club Plans a One Hundred Mile Event.

Although the accident of last year at the speed trials on Staten Island put a blight upon road racing for the rest of 1902, there is no reason why it should continue to do so. Railed locomotives run amuck and slay hundreds, jockeys are killed on the horse tracks, the trolley and the truck claim their victims regularly in greater number than the automobile, as has been shown by statistics in the Motor World. One unfortunate accident oes not pressage any more, but rather guarantees greater precaution against them. The straightaway road test is the natural and eminently the fittest one for an automobile. The highway is its province, and the track is not.

Automobilists have not tried to get permission for road races since last May, but there is no reason why they should not do so and why the permission should not be granted. Road races are almost necessary in the development of this now most important industry. The great interest taken in them is evident from the manner in which European contests are watched. It is a rebuke to the American spirit of progress and liberality that all the contests of this sort should be held on the other side of the Atlantic.

Considering these things, it is good news that the Long Island Automobile Club is planning a road race for the spring. The news of this was learned by a Motor World man in a telephone conversation with one of the officials of the club, the tenor of which was in this wise:

"It's getting along toward April. Is the Long Island Club going to have any reliability run this spring?"

"Oh, no! Reliability runs are out of fashion now, you know. There will be something else doing this spring, though."

"What is that, a race meet?"

"Something of the sort."

"Where, at the Brighton track?"

"O, dear, no—on the road, I guess."

"On the road! On Long Island?"

"Yes."

"What distance?"

"One hundred miles—the course will probably be one of fifty miles, with a turn."

"Is that settled?"

"Well, we are working on it now—working to get the permission, that is—and it looks very hopeful at present."

Street Sprinkling Reform Likely.

According to the latest gossip from the statesmen of the New York City Hall, there will be no attempt made by the Board of Aldermen to pass the Marks sprinkling ordinance over the veto of Mayor Low. It is deemed more probable that the ordinance will be amended or a substitute introduced conforming to the ideas of the Mayor, which are in a line with the provisions of the Oatman ordinance placing the sprinkling in charge of the Department of Street Cleaning.

The difficulty is that to make the desired change a new bond issue for about $500,000 will be necessary, and the present administration does not want to increase the tax rate by doing so this year. In the mean time there is no provision for sprinkling the city after next May, but this probably will be provided for by a bill authorizing the Street Cleaning Department to make contracts for the work for one year only, so that next year a bill putting the whole matter in the hands of the Commissioner can be again introduced. An effort will be made, however, to overcome the objections to making a bond issue and to take the Oatman ordinance out of committee and have it passed.

TO DOWN THE DUST

Test for That Purpose Suggested—Factors in Creating Discomfort on the Road.

It has been suggested by English autoists that a series of trials with seven or eight cars for the purpose of thoroughly investigating the dust nuisance would be of great interest, and possibly add to the sum of knowledge upon the subject. It is pretty generally recognized that a very low built car, any serious deviation from truth in the tires or wheels, a bent frame which causes the wheels to drag, very large tires and an exhaust which beats upon the ground are all causes which add to the raising of dust, but it is equally certain that a car which possesses none of these particular features will also raise a great deal of dust.

If a small car is taken which possesses one or more of the dust raising properties it may, in an extreme case, make almost as much dust as a large car, but speaking of the average, there is no doubt whatever that the larger and faster the car the greater will be the dust cloud.

There appears a tendency in some quarters to infer that the small machines are worse than the large ones. This, unfortunately, is not the case.

In some respects these suffer more than any other users of the road, as they may be running at five-eighths the speed of the fast car which overtakes and passes them, and the consequence is they remain in its dust very much longer than slower moving traffic. In fact, it is a common thing to see the owners of the lower paced vehicles slackening down to walking speed for a quarter of a mile after being passed by one of the dust lifting monsters, so as to get out of its track as soon as possible.



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LOOK TO THE GEAR!

Why They Require Occasion Inspection and the Sort of Attention They Merit.

Speed change gears are a part of the car that should be looked after intelligently. An inspection will show whether this has been done. The teeth of the wheels should show a brightly burnished surface on the faces, but not necessarily on the tops and bottoms. By "faces" is meant the breadth of the teeth which engage with the opposite wheel. If they show as brightly here as they do on the faces they have been intermeshed too deeply in the first place, and there is lively to be excessive wear. If they show dark or lightly touched surfaces, they have been correctly set, and they should be in good running order; in fact, they will probably be better than new. Each of the wheels should be looked at all the way round to ascertain that no teeth are broken.

If the sliding type of gear—that is, a type where the wheels are slid into engagement sidewise—be in the car under notice, the edges of the teeth should be looked to. If the car has been in good hands the teeth will show brightly on their engaging sides; but if the driver has been at all clumsy it will probably be found that the teeth are badly chipped at these points. The speed changing movements should all be closely watched while manipulating the actuating lever. The wheels on the sliding sleeve should move deliberately and accurately into their corresponding wheel—that is, provided the teeth are not opposite one another. The edges of the wheels should be in a perfect line, not one overhanging the other; if this is the case, it indicates a lot of lost motion in the connections between the sleeves and the actuating lever.

A certain amount of latitude is permissible here, but the movement should not be more than what might be termed "a little free." If there is a lot of "backlash" there is something wrong somewhere, and it should be carefully looked for with a view to correction. If the total width of one wheel exceeds that of the other, as is sometimes the case, particularly with the reversing gear, then it does not follow that something must necessarily be wrong.

Effect of Oil on Rubber.

Much has been said about the injurious effect of oil on rubber, and fears have been expressed that oiled roads would ruin the tires of automobiles that pass over them. It is, however, only certain classes of oils that are deleterious, and mineral oils are not among the number. A German rubber expert found that all the effect that mineral oil had on a vulcanized rubber made from 90 per cent. pure Para and 10 of sulphur was to cause it to swell to such a small extent that after five days' complete constant immersion it had only increased about 42 per cent.; in other words, a cubic inch had swollen to one and two-fifths cubic inches. This was, however, the mere interposition of the particles of oil in the pores of the crude rubber, and which, no doubt, could easily be expelled through squeezing it.

It is quite a different matter, however, as regards rancid animal and vegetable oils and fats, which act very energetically and deleteriously on rubber. Even linseed oil, by inducing oxidation, causes rubber to resinify.

Columbia Institutes a Course.

After repeated rumors to the effect that Columbia University is to have an automobile course have been circulated and denied, it is now officially admitted that such a course is to be introduced in the near future. The course will be designated as that of "Traction Engines and Automobile Carriages." It will consist of three lectures a week delivered by Professor Frederick R. Hutton, dean of the School of Applied Science. The lectures will deal with rolling stock, self-propelling road engines, railway engines and automobiles of all sorts.

Among the special subjects to be treated are signal systems, bell, whistle and headlight, capacities and structure, effect as limitations on power or haul, drawbars and couplers, water stations and motors other than steam.

The course will begin with an estimated enrolment of thirty students. If the attendance justifies it the course will be extended next year.

Keeping Down Repair Bills.

Repair bills are usually a pretty good index to the care and intelligence bestowed upon a car. It is the first duty to learn how to keep down expenses. When the multiplicity of parts that are in a car are considered, you can readily understand that when one part (which is always connected to another part) becomes loose or shaky that it in turn will loosen or destroy the accurate working of another part, which in turn will make a bad working engine or machine. Every part should be gone over at least once a day to see that everything is tight or properly adjusted, for the reason that when a looseness is discovered and remedied immediately it has saved a repair bill. If you fail to do this you must expect to pay your repair man more than necessary to keep your automobile in proper repair, and the repairsman is not to blame for it.

Helps get the Explosion.

In starting a car after a cold night it should be remembered that every ineffectual turn of the crank does some good. The congealed oil causes the engine to respond slowly, but a few turns warms it sufficiently to enable the welcome explosion to come finally.

DELIVERIES FREER

Cars now Coming Through in Good Shape—New York Stores Able to Meet Calls.

Stocks, ready for immediate delivery, are in somewhat better supply in New York City now from what they were a few weeks ago. Especially is this true with regard to imported cars. The new Mors cars can be had promptly from the Central Automobile Co., of No. 1,684 Broadway; Barry & Hayes, of No. 33 East Fifty-eighth street, have half a dozen of the new Georges Richard cars nearly free of the Custom House formalities; the American Darracq Co., of No. 652 Hudson street, have a shipment due in a few days, while Smith & Mabley have Panhards ready for the road at short notice.

No new Wintons can be kept on hand by Manager Owen at the Winton branch in East Fifty-eighth street, but shipments are being made regularly from the factory. At the Banker Bros.' handsome place at No. 141 West Thirty-eighth street there are a dozen of the new model Peerless cars ready to be taken right away by the purchaser, though the stock has been reduced by the sale of eight cars within the last few days. One of the buyers of the 35 horsepower 1903 Peerless is Milo M. Belding, jr., of the silk trust, who ran a 1902 car last year. The demand for Oldsmobiles is as steady as a rainfall in the store at No. 138 West Thirty-eighth street, but prompt shipments are being made. Homan & Schulz, at No. 134 West Thirty-eighth street, are having a brisk demand for the rugged Northern runabout, but manage to make prompt deliveries. The demand for the gas Locomobiles is crowding the factory to its utmost, but the capacity of this big plant is elastic. Ramblers are coming along in good shape to the Wanamaker store, as are also Searchmonts and so on. Without enumeration, it may be said that at present there is a goodly number of the New York branches ready to make immediate or very prompt deliveries, but the demand is quickening, and those who want cars for use in the early spring will be unwise to be dilatory in placing their orders.

Echo of the Bubble-Burst.

An echo of that gigantic fiasco known as the International Power Co. was heard last week. Deputy Sheriff Campbell, of this city, received an attachment for $39,350 against the Pioneer Power Co. of London in favor of Walter H. Knight, of New York, on assigned claims for ten electric vans, one victoria, two broughams and one omnibus, sold to the company on May 16 last by Joseph H. Hoadley for $27,350, and for three steam auto-trucks sold to the company by the International Power Co. for $12,000, no part of which has been paid. The attachment was served on C. S. Drummond, a director of the Pioneer Power Co., and on Mr. Hoadley.

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HARKNESS IN PARIS-MADRID

Cabled his Entry This Week—His Specially-Built Car Rapidly Nearing Completion.

It is evident that H. S. Harkness, of New York, expects to have his new cup race car finished in ample time for the contest, should he be selected by the committee, for he has cabled to France his entry for the Paris-Madrid race of May 24. Mr. Harkness bids fair to become one of the foremost of this country's automobile racing enthusiasts. He made his debut in the sport at Brighton Beach last August, where he drove his 40-horsepower Mercedes to victory in several races. He is now having built a car of special pattern designed by himself.

With the possible exception of Barney Oldfield, no man ever came more quickly to the front as a daring and skilful chauffeur than Harkness. Until the Brighton Beach meeting last August he was entirely unknown.

In common with many other drivers of this kind—Fournier and W. K. Vanderbilt being notable examples—Harkness runs his car in a manner that seems to be reckless and even careless. Yet accidents almost never happen to such men. They take chances, but only when there is a margin of safety, and then it is their marvellous manipulation of their cars that brings them through in safety. Nothing escapes them and every move is carefully calculated.

"Sporty blood" runs in the Harkness veins. Harkness senior is a Standard Oil magnate, who views his son's proclivities with a partial eye. The junior has followed many branches of sport, among them, some years ago, being bicycle racing, he having had quite a career on the track. He has thrown himself into automobile racing with the enthusiasm that characterizes him, and is very much in earnest in his desire to contest for the Bennett cup.

Racing and Talk of Racing.

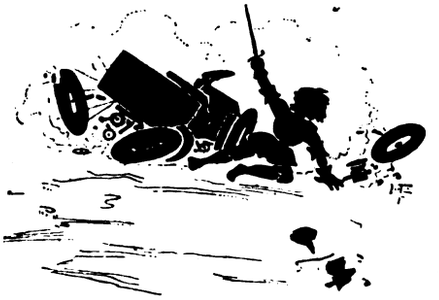
There is considerable talk of racing in the air, and prospects for a lively season in this respect. Messrs. Fournier and Winton started the big racing talk, but these worthies are not to have the field to themselves by any manner of means. The idea very properly has got into the heads of a number of manufacturers that racing their cars will be a good thing, and, while no one at present cares to speak definitely of his plans, it is expected that most of the new concerns, such as the Moyea, Matheson, Panam, and also several of the older makers, will be to the front with racing machines.

It is known that the Peerless people are having built a duplicate of the car that has been entered for the cup race—and, by the by, this will be of about 80 horsepower—and that this car will be on hand ready to get into anything there is going in the way of a race meet. This duplicate car will be delivered in New York in about a month to Manager C. J. Wridgway, of the Banker Bros.' store, and will be kept there, stripped to racing form, "just to run errands," as Manager Wridgway puts it. "Wally" Owen, of the Moyea company, is another who is likely to be seen on the racing track during the year. John Wilkinson, of Syracuse, is another who promises to break into the game with a special racing car, which he says he will be willing to back against Fournier, Winton, Jarrott or any of them. In fact, it looks as if there would be plenty of material to justify the formation of a racing circuit.

To Philadelphia, not Lakewood.

Owing to the probability of the run to Lakewood and back, as projected by the Automobile Club for February 21-23, leading through a sea of red New Jersey mud, the programme for the first outing of the year has been changed by the Tours and Runs Committee of the club. It was learned that from Old Bridge to Lakewood, a distance of about thirty-five miles, there is a stretch of road which after a thaw breaks up into a bog of red mud, deep and heavy enough to mire the lighter class of automobiles. It was thought discreet, therefore, not to take chances on the weather and run the risk of having the trip spoiled by mishaps in the mud.

The destination for the first run has accordingly been changed from Lakewood to Philadelphia. The trip from New York will be an informal one, each participant starting when he pleases and going by any route he prefers. The route suggested by the committee, though, and the one likely to be taken by most of the members, is by way of the Twenty-third street ferry to the Hudson County Boulevard, then to Bergen Point, across the ferry to Staten Island, along to Tottenville, and by ferry back to New Jersey again at Perth Amboy, and then through New Brunswick and Trenton to Camden and Philadelphia. The participants will rendezvous at the Bellevue Hotel on Saturday night, where a banquet will be served. Sunday will be spent in trips about the city, and the run to New York will begin on Monday morning. The run will have a pacemaker, and arrangements are to be made by which the members will be spared annoyance from the police on account of the new license law of the Quaker City.



HIS KINGDOM FOR A HORSE.

RIFLES FOR "RED DEVILS"

Connecticut Legislator Waxes Wroth at a Meeting Called to Consider his Be-Gosh Bill.

It is peculiarly appropriate that Representative Warren, the introducer of the bill in the Connecticut legislature restricting the use of the automobile, places himself on record in the matter. He declared last week that it might be a "good idea to use a rifle in some instances to bring the Red Devils down to a proper speed."

His remarks, which were made in the Hartford Capitol at a meeting of about sixty of the "farmer" members of the legislature, met with general approval, according to the Hartford Post.

The meeting was held to discuss in an informal manner the advisability of having the law in regard to the speed limit on country roads amended so as to give greater protection to farmers and their teams. It was enlivened by very general remarks on the part of the members present regarding the recklessness of drivers of automobiles in running them at a high rate of speed. The indifference of the automobilist was generally condemned, and Representative Warren, of Lyme, who has introduced a bill in the House for licensing and regulating the speed of automobiles, suggested that each machine be numbered on the rear as a means of identifying it in case of any damage being caused by horses becoming frightened or other accident happening through the high rate of speed at which they were run. He remarked that it might be a good idea to use a rifle in some instances to bring the "Red Devils" down to a proper speed. His remarks met with general approval.

A committee of four Representatives was appointed by Representative Bowen, of Woodstock, who presided, to formulate a bill on the matter and to take under consideration any other matters of interest which may come before the General Assembly.

The following is the committee appointed: Representatives Savage, of Mansfield; Staub, of New Milford; Case, of Barkhamsted, and Warren, of Lyme.

Sixty Within the Hour.

Speeds at the rate of more than a mile a minute have frequently been reached on an automobile, the mile of M. Augueries being but slightly under ninety miles an hour. Until last summer, however, sixty miles within an hour had not been accomplished—at least not over a measured course and with unimpeachable timing. In the Ardennes circuit race Baron Pierre de Crawhez accomplished the feat, although he failed to finish the race.

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SENSIBLE LAW IN JERSEY

A Substitute Introduced for the Scovel Bill That Seems Fairer All Around.

Bowing to the storm of protests raised on the presentation of his automobile measure in the New Jersey legislature, Representative Scovel, of Camden, is willing to compromise the matter. At a meeting held on Monday a new bill was roughly blocked out and will shortly be introduced. It will contain a registration clause and a clause requiring autoists to stop on signal. In other respects it is an admirable measure, calling for speeds of ten miles in the towns and twenty miles in the country. It appears to be satisfactory to all concerned, and sure of passage.

The conference was held on Monday night, when Representative Scovell met Karl G. Roebling and John S. Broughton, representing the New Jersey Automobile Club. The result of the conference was practically an agreement to have the committee which now has the custody of the Scovel bill report a substitute which will afford ample protection to the users of the public highways and not work hardship to the automobilists.

On public highways in the built up portions of cities the rate of speed is not to exceed ten miles an hour, and in rural districts the maximum rate of speed is to be twenty miles an hour. Physicians and surgeons, while actually going to or returning from professional calls, are not to be restricted to this speed when the emergency may require them to go at a faster rate.

Under the projected law every operator of a motor vehicle shall, at the signal from a person riding or driving a restive horse or team, cause the motor to remain stationary so long as may be necessary to permit the team to pass.

It is provided that the term "motor vehicle" shall include automobiles and all other vehicles propelled otherwise than by muscular power, excepting the cars of electric and steam railways and other vehicles running only upon rails. Bicycles, tricycles and other vehicles propelled exclusively by muscular pedal power are specifically excluded.

Every resident of the State who owns a motor vehicle, and every non-resident owner whose motor vehicle is driven in the State, shall file in the office of the Secretary of State a statement containing the owner's name and address, together with a brief description of the character of the machine, and shall pay a registration fee of $1 for each vehicle. In return a certificate will be issued by the Secretary of State for each vehicle.

Besides this certificate the owner must have the initials of his name and the number of his license upon the back or side of each vehicle, so as to be plainly visible, the letters to be at least three inches in height and the number to be not less than two inches in height. Every motor vehicle will be required to carry from one hour after sunset until one hour before sunrise at least two white lights, visible at least 200 feet in front and at least one red light, visible from the rear. Every vehicle must also be provided with good brakes and suitable bell, horn or whistle.

By complying with these requirements the owners of motor vehicles are to have the same rights and privileges as are accorded to the owners and drivers of carriages propelled by horses. Automobilists cannot be prohibited from the use of any public streets, avenues, roads, driveways, parkways or other public place by any local regulation.

For violating any provisions of the act the offender will be fined $25, to be paid to the Overseer of the Poor. Justices of the peace, police magistrates and recorders shall have jurisdiction to try and punish all offenders. An appeal may be taken to the Court of Common Pleas.

Licensing and Tagging the Quakers.

Philadelphia automobile owners are complying very slowly with the requirements of the ordinance approved by the Mayor on December 26 last, which make it mandatory upon owners of automobiles to take out licenses from the Bureau of Boiler Inspection. Up to the end of last week only fifty-three of these licenses had been issued, and blue enamelled signs, seven inches long and four inches wide, were given to such of the owners and chauffeurs as applied. In one corner is the year and in another the number of the license.

These licenses and signs are to be issued annually in the future, and the bureau officials are anxious that automobile owners comply with the requirements of the law. The matter of the inspection of the machines themselves, as manufactured, has not been undertaken as yet, as it was thought to be more important to attend to the licensing of the operators themselves.

Globe-Girdling Tour Abandoned.

An inglorious ending of the globe girdling expedition of the "Passe Partout" has come about. The car is stranded at Nijni-Novgorod, Russia, and the trip has been definitely abandoned. No other outcome could have been expected. With perfect management even the scheme was a visionary one; but it seems to have had no chance whatever, being lacking in every requisite for success, even the sinews of war—money—not having been provided.

It is rumored, too, that Dr. Lehwess, the leader of the expedition, has been brought low by one of Cupid's darts. A fair Muscovite maiden is, so it is said, to be led to the altar, which may account in part for the doctor's willingness to call the trip off.

VISCIOUS QUAKER LAW

Excessive Tax Proposed in Pennsylvania Under the Guise of a Good Roads Bill.

In a "good roads" bill introduced in the Pennsylvania legislature a nasty blow at the automobile is aimed. This bill, which failed of passage last year, has been prepared by Arthur Kirk, of Sharpsburg, Pa. Any merit it may possess as a measure intended to further the cause of road betterment is vitiated by the savage attack it makes on the mechanically propelled vehicle.

Section 38 of the bill provides that "every owner or user of an inanimate motive power propelled, road travelling vehicle shall annually pay to his or her county treasurer (except makers) $20 on or before the first day of April each year, or $3 per month for any fraction of a year. For which he or she shall be given a licensed figured plate by his county engineer, which must be conspicuously attached on the left side of the vehicle so that its number can be easily read while the vehicle is in motion, and if the above license fee is not paid before the tenth of each year 50 cents for each month or fraction of a month. The above license fee, with cost of collection and all penalty for non-payment of license shall be paid to the informer who made information that license for that year has not been paid."

The bill is a good one to mark for defeat, or at all events for amendment.

Senator Grim, of Bucks County, last week introduced a bill in the Pennsylvania legislature providing for the registration of automobiles, licensing the operator and limiting the speed to eight miles an hour. The bill requires the operator to take out a certificate in every county through which he runs his machine.

Wisconsin Legislature Hard at it.

Legislators of the Badger State are now trying their hands at automobile laws. Last week Assemblyman Moldenhauer, of Milwaukee, introduced a measure providing for the registration and regulation of automobiles. All such vehicles are to be registered with the Secretary of State, and whenever approaching a team drawn by horses must either come to a full stop or proceed slowly so as not to give fright. They must be equipped with bells or horns and carry red lights at night. Reckless drivers are to be punished.

His Honor's Sound Sense.

It was a very sensible observation which Councilman Gnichtel, of Trenton, N. J., made last week. Mayor Katzenbach's veto of the recent automobile ordinance was taken from the table. Some action had been suggested, but Mr. Gnichtel said laws were now pending in the legislature affecting automobiles, and that the city better wait till one of those laws pass. "Then we will have something tangible on which to work," he added.

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BAY STATE PREJUDICES

Massachusetts Solons Have Seven Bills Before Them—The Chief of Them.

No less than seven bills relating to the use of automobiles have been presented or prepared for submission to the Massachusetts legislature. They range, of course, from good to bad. Most of them betray the existence of the feeling so general at this time that the self-propelled vehicle should be hedged around with restrictions of all kinds —their owners compelled to register, undergo examinations, carry numbers, etc. In short, they are viewed as being entirely distinct from other wheeled vehicles and under suspicion merely because they are automobiles.

Of these bills the most lengthy and carefully drawn is the Cox bill. Except in the particulars referred to—in its assumption of a paternal tone—it is a good bill. Under its provisions a speed of twenty miles in the country and twelve miles in the towns is allowed. The bill provides that the Governor, with the advice and consent of the Council, shall constitute an automobile registration board. It then goes on:

Section 3. Every owner of an automobile or other motor vehicle, either personally or by some one in his behalf, before such vehicle is operated under his ownership upon any public street or way, shall file with said board a written statement setting forth the upon a public street or way, shall file with said board a declaration in writing duly name and residence of the owner, a fair description of the vehicle containing data sufficient for identification, such as type and style of vehicle, seating capacity and type and power of motor used.

Sec. 4. In case an automobile or other motor vehicle described in the statement filed as aforesaid shall not in the opinion of said board be lacking in the possession of good qualities of construction and of sufficient safety appliances, said board shall issue to said owner a certificate of registration, containing reference to the vehicle sufficient for identification and containing a serial number to belong to such vehicle only and to be signed by said board.

Sec. 5. Every person, before operating an automobile or other motor vehicle in motion signed by the declarant, to the effect that he is in fact an expert automobile driver, and such declaration may be made in general terms or with such qualifications as to style and type of machine, or otherwise, as the declarant may deem fit.

Sec. 6. In case a person who files a declaration, as provided for in this act, shall not, in the opinion of said board, be so lacking in physical and mental and other qualities as to render him a person unfit to be intrusted with the care and control of an automobile in a public street or way, said board shall issue to such applicant a certificate of registration to the effect that such applicant is registered as an automobile driver, with such forther designations and limitations or provisions as to the board may seem appropriate.

Sec. 7. Said board, before issuing any certificate of registration as aforesaid, may require the applicant to submit to such reasonable trials, tests and examinations as said board in its discretion may require.

Sec. 8. Each certificate issued under the provisions of this act shall be good and valid for the term of one year from the day of its date, and for no longer period. Due notice of the date of expiration of each such certificate shall be sent by said board to the last known address of the owner or driver respectively, not less than one month and not more than two months prior to such date of expiration.

Sec. 9. For filing the statements and declarations and for the issuing of the certificates of registration, and for the examination, trials and tests as provided for in the above sections, such fees shall be paid by the applicants as may from time to time be determined by the Governor and Council. Such fees shall be paid to the board, and shall be forwarded by said board to the treasurer of the commonwealth. There shall be allowed and paid to the members of said board by the treasurer of the commonwealth from the fees received under the provisions of this act such compensation as the Governor and council shall determine; and there shall be allowed and paid to the members of said board by the treasurer of the commonwealth from time to time, upon the approval of the Governor and council, such sums of money as may be certified by the chairman of said board to be required for its expenses.

Sec. 10. In any case where application is made for registration as aforesaid of either vehicle or driver or both, such driver or such vehicle being then duly registered in another State or country under provisions of law substantially similar to those contained in this act, or in any other case where such action may seem to said board to be proper, said board may in its discretion issue temporary certificates of application for registration, to be valid for a definite period of time to be expressed therein, and such temporary certificates may be further extended or renewed from time to time in the discretion of said board.

Sec. 11. No automobile or other motor vehicle shall be run on any public street or way unless either valid certificates of registration or valid temporary certificates of application for registration as aforesaid, both for such vehicle itself and as driver for the person then in charge or control of it, are then outstanding.

Sec. 12. No automobile shall be run on any public street or way unless such vehicle is equipped with two efficient brakes, at least one of which is efficient for backward motion as well as for forward motion, nor unless such vehicle is also equipped with efficient locking device for control of lever or other effective means for locking the vehicle if and while left standing, nor unless the steering gear is reasonably efficient and in good working order.

Sec. 13. No automobile shall be run on any public street or way unless such vehicle shall carry upon a vertical plane perpendicular to the longitudinal axis of the vehicle to the rear of the rear axis of the vehicle and so located as to be always in view, the same to be efficiently illuminated at night, the serial number of such vehicle corresponding to the serial number given in the then valid certificate of registration, such number to be in figures of white on an effective dark background, and each figure thereof to be not less than four inches in height and two nches in width, the strokes to be of uniform width of not less than one-third of an inch, and successive figures to have between them a free space of at least one inch; provided, that the provisions of this section shall not apply to an automobile run under a temporary certificate of application for registration as aforesaid, unless so required by the terms of such temporary certificate.

Sec. 14. During the time subsequent to one hour after sunset and prior to one hour before sunrise no automobile or other motor vehicle shall be run on any public street or way unless it shall be equipped with efficient and lighted lamp or lamps showing white light from the front, and from the rear showing red light.

Sec. 15. No automobile or other motor vehicle shall be run on any public street or way at any greater rate of speed than is reasonable and proper with due regard to the reasonable use of such street or way by other persons then and there, whether in the use of other vehicles or as pedestrians or otherwise, nor so as unreasonably to annoy or endanger any person.

Sec. 16. No automobile or other motor vehicle shall be run on any public highway outside the limits of a city, fire district or thickly settled or business part of a town at a rate of speed exceeding twenty miles an hour, and no such vehicle shall be run on any public way within the limits of a city, fire district or thickly settled or business part of a town at a rate of speed exceeding twelve miles an hour.

Sec. 17. Every person having control or charge of an automobile or other motor vehicle whenever upon a public street or way and near any vehicle drawn by animal power, or near any animal upon which a person is riding, shall so operate, manage and control such automobile or other motor vehicle as to exercise every reasonable protection of any and all persons near by. And if such animal or animals appear to be frightened, the person in control of such automobile or motor vehicle shall reduce its speed, and if requested by signal or otherwise by the driver of such animal or animals shall not proceed further toward him unless such movement be necessary to avoid accident or injury, or until such animal appears to be under the control of its rider or driver.

Sec. 18. Upon approaching a crossing of intersecting ways and also in traversing the crossing or intersection the person in control of an automobile or other motor vehicle shall run it at a rate of speed not greater than is reasonable and proper and with due regard to the traffic and the use of the intersecting ways, however slow such reasonable and proper rate of speed may be

Sec. 19. No person having control or charge of an automobile or other motor vehicle as driver shall fail to stop upon signal from a police officer or constable in uniform, or from any person whom such driver has reasonable cause to believe to be a constable or police officer, and no such driver upon such signal shall fail to remain long enough to give to any constable or police officer so signalling ample opportunity to make reasonable inquiries as to the name and residence of the owner or driver, and no such driver shall fail to make true answers to such inquiries.

Sec. 20. No owner of an automobile or other motor vehicle then present and no driver of such vehicle then in charge or control shall take flight for the purpose of escaping responsibility for any injury to person or property caused by collision between such vehicle and any other vehicle or person or thing.

Sec. 21. No person, whether or not the holder of a certificate of registration as an automobile driver, shall wilfully put in motion upon a public street or way any automobile or other motor vehicle without authority from the owner or driver or other person in charge or control of the same.

Sec. 22. The term "motor vehicle" in this act shall include all vehicles propelled by any power other than muscular power ex-

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cepting railroad and railway locomotives and cars and excepting motor vehicles running only upon rails or tracks.

Sec. 23. Cities and towns shall not make any ordinance, bylaw or regulation inconsistent with the provisions of this act.

Sec. 24. Whoever violates any of the provisions of this act shall be punished by a fine of not more than $200 or by imprisonment for not more than ten days, or by both such fine and imprisonment.

Sec. 25. Chapter. 315 of the acts of the year 1902 is hereby repealed.

Sec. 26. For the purposes of the appointment and organization of said board and of registration of persons by it hereunder this act shall take effect upon its passage, and shall take full effect on the first day of the calendar month next succeeding the month in which the terms of office of the members of said board shall begin.

Sprags of Recent Origin.

It is interesting to recall that in the early days of automobiling sprags and similar devices were unknown. In 1895 the Pugeot people employed cliquets or ratchet wheels on their cars to prevent them running back on a hill owing to the motor stopping or the driving missing the gear in changing speeds. At that time no other maker used a device of the kind. Sir David Salomons met with a slight accident due to melting snow on a steep hill when the cliquet did not act. As a result he devised an arrangement to avoid such troubles in future that was a sort of double sprag. It was the first application of the bequille, or sprag, to a motor car, and resulted in its adoption by French motor car builders universally.

Radiators and Condensers of all Sorts.

If it is anything in the radiating line—coil radiators or the more showy honeycomb type—the Whitlock Coil Pipe Co., Hartford, Conn., make it. Radiators are the concern's specialty, three grades of coils being made. These coils are made up without the use of castings, the return bends being made of bent tubing, which are bent by means of special patented machinery without flattening or injuring the tube in the least. This makes a very superior radiator of greater



strength than is possible when made with castings of the same weight.

These radiators are made up complete, ready to attach to the car, and the finished dimensions can be such as to suit any desired space. The coils are painted dead black, and are secured by means of hardwood straps and spreaders, bound with polished brass straps, presenting a very handsome and substantial appearance.

At the recent automobile show at Madison Square Garden several honeycomb radiators made by the Whitlock people were seen. This ingenious transatlantic type of cooler is illustrated in one of its multifarious forms, from which a good idea of the principle of its construction—whereby currents of air are passed through the body of water—can be obtained.

Economy of Electric Fire Wagon.

Some interesting facts are brought out regarding an electrical fire wagon which is being experimented with by the Berlin Fire Brigade authorities. It is capable of attaining a speed on the level of twelve and one-half miles per hour, and is driven by two electric motors, each of which is rated at 9 horsepower, but which can, on occasion, develop 12 horsepower without fear of damage. The vehicle, complete with battery, firemen, hose, ladders, etc., weighs seven tons. The cost of such a car is stated to be $3,000; the annual cost of upkeep and energy is put down at $625, this including 5 per cent. interest on the first cost, and 5 per cent. for depreciation and renewal. The average cost per kilometre works out at 2½ marks (about 62 cents), which is stated to be less than that of animal traction.

The Week's Exports.

Argentine Republic—3 cases motor vehicles and parts, $785.

British Possessions in Africa—3 cases motor vehicles and material, $861.

London—10 cases motor vehicles and material, $5,670.

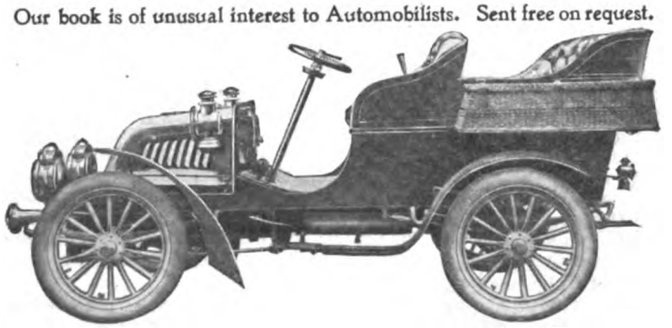
Liverpool—4 cases motor vehicles, $3,086.

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Are Preeminent for Speed. Safety, Reliability and Economy.

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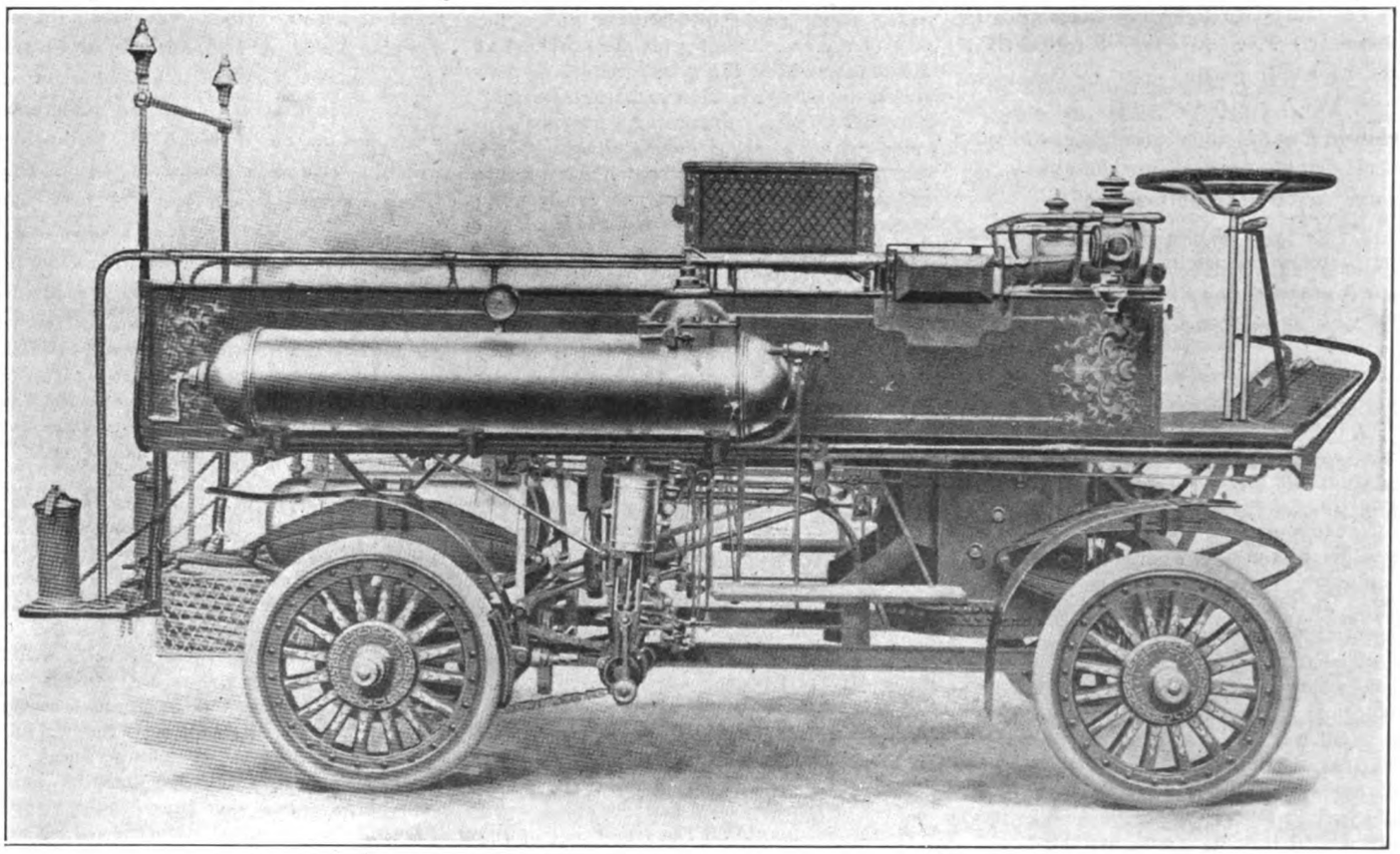
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FOR FIRE DEPARTMENTS

Vehicle and Figures Brought to Bear That Show Many Far-Reaching Economies.

In fire department work efficiency is the great desideratum. Next come cost of maintenance and space economy. In all three particulars the horseless type of vehicle scores heavily, as is shown by a comparison made of the cost of operation of the La France combination chemical engine and hose wagon and a horse drawn vehicle of similar character.

The combination wagon is of massive construction, and designed with extreme care. The running gear has an 8-foot wheel base and 58-inch tread; the axles are 2* inches, and perch rods are made of 3-inch channel steel. These rods are connected at each end in such a manner as to make the entire running gear very flexible. The wheels are 36 inches in diameter, with 4-inch solid rubber tires. The body is mounted on four elliptic springs.



Two separate steam engines supply the power, giving an independent drive for each rear wheel. Each of these engines is of the double cylinder type, high speed and double acting, and both are controlled by a single throttle lever operated from the centre of the seat. Either engine may be cut out of operation if required. Wheel steering is used, and consists of a worm with transverse block or nut, operating directly through a bell crank upon the steering wheel connection. The wagon is fitted with hand and tire brakes.

A chemical tank is carried on either side, having a capacity of 35 gallons each; while 150 feet of chemical hose is carried, and there is space for 1,000 feet of 2½-inch hose. Both the water and gasolene tanks are made of copper; the capacity of the gasolene tank is 15 gallons, of the water tank 30 gallons.

Provision is made for keeping up steam in the boiler by connecting with an ordinary illuminating gas supply, with an automatic cut-off, which breaks the connection and frees the vehicle as it starts. The speed of the latter is 20 miles an hour.

"The use of horses involves constant expense for the following items, none of which are chargeable to automobile apparatus," the La France people, whose factory is in Elmira, N. Y., say:

"Horses; feed; shoeing; harness; harness repairs; bedding; blankets; brushes and hostlers' supplies; veterinary surgeon; veterinary surgeon's supplies; stalls and fittings; stall floor renewals; horse pole; harness hangers and quick hitching straps, and incidental expenses due to runaway horses.

"The following items of expense chargeable to an automobile apparatus are not incurred with the use of horses. Gasolene, heating device for boiler, and repairs of machinery.

"The following items of expense would be common to apparatus of both types: General repairs, chemical supplies, and operator or driver.

"Based on the reports of ten fire departments in this country, the automobile, as regards maintenance, shows an average saving of $300 per year.

"Assuming an average life of an apparatus of either type to be twenty years, which is conservative, the following table shows the result:

"Original cost of horse combination wagon	$2,000
"Original cost of automobile combination wagon	5,000
"Saving in maintenance for twenty years at $300 per year	6,000

"In other words, the saving in the cost of maintenance for a term of twenty years will more than cover the entire original cost of the automobile apparatus by $1,000. Or, looking at it in another way:

"Saving in maintenance for twenty years	$6,000
"Increase in first cost	3,000
"Net saving	3,000

"In this estimate $1,000 has been allowed for miscellaneous repairs and parts in connection with the boiler, engines, etc., of the automobile wagon.

"There is a further saving in automobile apparatus, which has been omitted entirely from consideration, as it would be difficult to make an accurate estimate. Nevertheless this saving is actual.

"We refer to the saving which could be effected in the construction of fire houses, viz.: (a) The dispensing with a horse pole shortens the apparatus about nine feet, which represents a floor area of about fifty-four square feet; (b) the saving in stall space would be about ninety square feet; (c) no harness or hangers being required, the ceiling of the apparatus room could be at least three feet lower."

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CAUSES OF SKIDDING

Parts Played by Tires, Differentials and Brakes and the Manner of the Resulting Slips.

"It is said that a carriage skids when it is thrown off its momentum, and its back wheels lose grip because of the slipperiness of the soil. In some cases it slides, in others it turns round and round, or waltzes. The principal cause of sideslipping is the carriage itself, the secondary cause being the soil," says M. Leon Auscher, of Rothschild et Fils.

"With rare exceptions all French automobiles have the two following characteristic features: (1) The motive force is transmitted from the small pinion shaft to the back wheels, which are therefore the drivers; (2) the pinion shaft is supplied with a 'differential,' a piece of mechanism which allows the carriage to turn, permitting the back outside wheel, at a turning point, to revolve faster than the interior wheel. When travelling in a straight line the revolutions of the inside and outside back wheels should be the same.

"These two features point to two results: An automobile is propelled from behind. As long as the direction is absolutely rectilinear all goes well, but should there be a deviation, from one cause or another, from the straight line, the 'back' tries to get in front, and if at this moment the grip of the wheels ceases, on account of a greasy road, then the automobile attempts to describe a circle, pivoting on one of its front wheels. The differential is an appliance which should, theoretically, govern the two back wheels, which, when travelling in a straight line, should turn at the same rate. Practically such is not the case, and it is easy to understand that the slightest irregularity in the regulation of these two wheels would cause a difference in their rotations, and when this occurs a skid is more than possible.

"Skiddings caused by the 'differential' have one peculiarity—they are automatic and at times occur in a most unexpected manner when the vehicle is pursuing a straight course. And, apart from the 'differential' and the soil, there are two other important factors which bring about skidding, and these are the pneumatic tires and the brake. The pneumatic tire, without an anti-skidding band, has a larger bearing on the road than a solid india rubber or iron tire, and the pressure on the surface of the earth is therefore weaker, and consequently the grip is less.

"The brake also plays an important part, for it is evident that if, at the moment of putting it on, the effect on the two back wheels is not identical a skid similar to those caused by the 'differential' is likely to occur, the difference in the rotary movement causing the carriage to slip at the side on which the wheel is most checked. There is not, however, a point upon which all automobilists agree. The majority say that one must put the brake on after disconnecting. I am not entirely of this opinion, for I have often remarked that a progressive 'braking' without disconnecting has a less 'skiddish' effect.

To Keep the Feet Warm.

While a spin on one's car during the winter is most exhilarating, there are many autoists who suffer from cold feet. To overcome this difficulty, a Frenchman has, states La Locomotion, fitted to his car an arrangement which accomplishes the purpose. It consists of an extension of the water-circulation pipes, the water heated by the motor being made to circulate under the floor of the car. Small grids are provided at the places where the passengers' feet rest, and to increase the heat radiation, the portions of the pipes under the grids are provided with radiating fins. Suitable valves are fitted, so that the water circulation under the body portion of the car may be opened or shut off as desired.

A similar arrangement has been fitted to a number of Benz cars. A tap is inserted in the water pipe leading from the engine to the tank; a branch is taken from this pipe on one side of the tap, and is led to a grid, made of copper tubing, placed on the footboard of the car, thence returning to the other side of the tap above referred to. By shutting off this tap the water is made to travel through the copper pipe forming the grid, the heat given off from this keeping the feet of the passengers warm. If it is required to throw the footwarmer out of action it is only necessary to turn the tap, when the water will return direct without passing round the grid.

The best position of this grid is a few inches from the floor of the car, so that the feet can be placed, not on it, but beneath it, the feet being kept warm from above and not through the soles of the boot, as is generally the case. The arrangement, in conjunction with a rug or apron, will keep the occupants on the front seat of the car perfectly warm, even during severe weather. Of course, a similar grid can be provided in the tonneau at the back of the car. The arrangement can be fitted at a very small cost, and has also the advantage of helping to keep the water cool, acting as a radiator as well as a footwarmer.

Test of a Sthenos.

An interesting trial of a Sthenos carburetter was made recently, which showed its wide range of action. A 1¾ horsepower motor fitted with one of these carburetters was arranged to drive a dynamo for the purpose of testing its output. The carburetter was then supplied in turn with gasolene, alcohol and kerosene, and ran well under each of these conditions, giving a constant output from the dynamo. It is further stated that the exhaust was devoid of smell with all three fuels.

CARING FOR THE CAR

Abuses to Which it is Subjected by Beginners and the Expense Bills That Ensue.

"In running an automobile of either steam or gasoline I have found a great number of things one must learn to do. For instance, in a steam motor one must not force the throttle or starting lever suddenly, for fear of jerking the automobile almost from under one or tearing the engine from its fastenings," says an experienced autoist.

"While an automobile is made to stand a great deal of abuse, they, of course, cannot stand treatment which will break up any machine built. A beginner almost invariably has unnecessary repair bills, due entirely to the fact that he does not understand what not to do. I recall an instance in which a customer bought a second-hand steam carriage which had not been used for more than six or seven weeks, and it was fully as good as new, yet in one month's time he had paid about $100 for repairs. He, of course, blamed the motor for the enormously high bills for repairs, stating that the machine was no good. Had he been familiar with machinery he could have been taught more easily how to handle it, and would have had no trouble with his automobile.

"He would forget to oil his machinery, and wonder why it would not run. The consequence was a very badly cut cylinder and badly cut crosshead guides. This necessitated the removal of the engine from the carriage and reboring of the cylinder. Of course, this was the fault of the machine and not the operator. On his next trip he forgot to look after his water, and in consequence of this had to pay for a badly burned boiler. This, of course, made it necessary to again tear the machine apart. This performance was gone through for a whole month. By this time the owner was thoroughly disgusted and ready to sell out for almost nothing, but was induced to try again. Now he can get along without his enormous monthly bills, and is fully satisfied that he was to blame.

"Another thing beginners must learn is that an automobile is a machine and needs attention the same as any other machine. One customer will say, 'I want an automobile that I do not have to oil and take care of.' Still another is willing to oil up every hundred miles or so, while if you want your machine to last you must oil every fifteen or twenty miles, for the less oiling you do the sooner your machinery will cut and wear out; the better attention you give your car the longer your machinery will last, and the less it will cost for repairs. This rule holds good in all makes of automobiles, for no manufacturer has as yet succeeded in overcoming this difficulty of giving it proper attention."

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CAN BE CLEANED TOO MUCH

How Cars are Injured by Unwise Washing—The Care Necessary in Painting.

"Carriage painting and varnishing is a deep and momentous subject. It is said a prominent carriage builder of Kentucky, one of the kind who does not sit down and curse his varnish maker for all the mishaps which occur to his work, both before and after it leaves the shop, told the following story illustrating the fact that in some instances at least it is not the use, but the abuse, of the varnish which spoils the work," says a correspondent of the Hub:

"'You see, our soil plays the deuce with varnish, spotting it and sometimes entirely removing the gloss if allowed to dry on. Well, every now and then a customer whose wagon is under a cloud from this cause walks in and pitches into us for not understanding our trade or using bad varnish. We protest and explain, and sometimes—once in a great while—make 'em see it. As if this was not enough to contend against, we were called out one morning to examine a physician's phaeton which we had finished a short time previous in our very best manner. Paint and varnish were entirely gone from some parts, the rest looking as though the job had been varnished with muddy water. The irate doctor suggested that we do that job right over again, saying he "always supposed you knew how to paint," but "take in your shingle now," etc.

"'We asked for a few days to inquire into the cause of this paint wreck, as we could not at the moment account for such an extreme case, and we know the paint and varnish were all right and properly applied. Our painter and myself passed different views on this subject, but were unable to solve it. We chanced to see the stableman, and we inquired with an assumed carelessness of manner how he always kept the carriages under his care looking so much cleaner than those of the neighbors. He at once swelled up with pride, put on that appearance of vast intelligence which the darky so well knows how to assume, and said: "Why, yer see, I des takes soap and hot water and dese yer tother fellows uses cold water, he! he! he!" "Oh, I see. Well now, Samuel, don't you tell anybody of your new idea. You're entitled to keep that all to yourself." When the doctor called again we convinced him that his phaeton had better be done over, but not at our expense.'

"A case once came under my own experience," continues the correspondent. "A doctor had a stanhope buggy, built of the best material that market could produce. Care had been taken in applying each coat of paint and varnish. In about three months it was brought back, and I would never know it was the same buggy. Every joint in the body was swelled apart and paint had scaled off. The doctor claimed he had been cheated and would never have any more work done at that shop. An inquiry revealed that it had been washed two or three times every day and never had a chance to dry out. The body had to be removed from gearing and placed near a fire to dry out before fastening down the joints. It never could be fitted up as it was before unless by repainting. Too much washing is injurious to the varnish, and more especially when it has lately been turned out. Care should be exercised in applying each coat to see that the coat already on should be perfectly dry before another is applied.

"Go where we may among manufacturers of all styles and kinds of carriages and ask the question, 'In what part of your business do you experience the most annoyance?' the universal answer will be, 'The paint shop.' The same condition of things has existed for years, in fact as far back as carriages were deemed worthy of being painted; yet, knowing all this, there has been but little, if anything, done that would remedy the evil.

"If the paint on a carriage fails to give satisfaction the white lead, oil or varnish is blamed, but the idea of looking into the manner in which the paint was applied is scarcely ever entertained, except in a few of our leading factories. A good foreman is supposed to be all that is required. He may, however, be provided with the worst class of help and occupy a shop no better adapted to carriage painting than a barn would be. The youngest apprentice, who knows nothing about the nature of paint or how it must be applied, except that the wood must be covered, is selected to lay the foundation coats, or priming. He applies it to the wood without brushing more than is necessary to cover, and in all degrees of thickness.

"The same class of help sandpapers, and, in fact, does everything up to and including the rubbing of the rough stuff; after which the painter is expected to produce a good job. If he fails, the man who sold the materials employed commonly receives the blame. Good painting can only be secured by the employment of skilled labor and the use of good materials; without the former even the latter is of but little advantage.

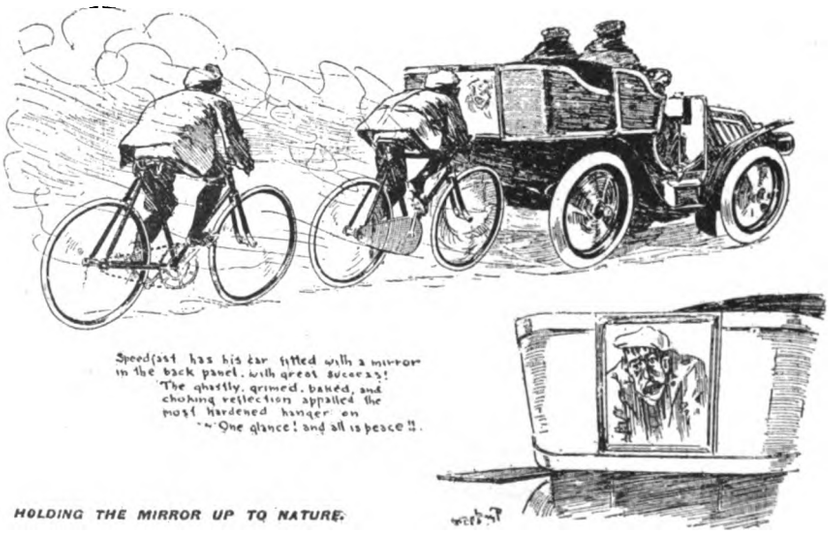
"There are, however, extremes to be avoided in carriage painting even when the best material is at hand. One, the excessive use of turpentine; the other, the excessive use of oil. Another is the excessive use of japan."

"Garage;" its Origin and Meaning.

Two years ago scarcely one American in a million knew what garage meant. Strictly speaking, a garage is a siding into which vehicles are shunted, such as the railway sheds in which one sees engines lying by. In France it has usually been used to describe the place in which boats are put aside while not in use. When automobilism came along somebody employed it to describe what might be called the coach house in which motor cars are sheltered, and it caught on. The word, like many other French works—serviette, table d'hote, chic, for instance—was taken up in this country and looks like staying here.

Squeaks From Dry Springs.

It frequently happens that a lot of squeaking and grinding arising from a car is due to the fact that the springs are very dry—that is to say, the grease between the leaves of the springs having become dried up or pressed out, the leaves themselves are bearing harshly upon one another. A simple way of remedying this is to jack up the car body and to open the springs slightly by means of a screwdriver, and working in some gear box grease by the aid of a thin bladed knife. The superfluous grease which will be pressed out of the springs upon lowering the body should be immediately removed, otherwise it will be apt to collect dust and work in between the leaves, thus causing an objectionable grinding noise.



HOLDING THE MIRROR UP TO NATURE.

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Added to A. C. A. Roll.

At a meeting of the Board of Governors of the Automobile Club of America on last Tuesday it was decided to send delegates to represent the club to the convention of the National Road Makers, which is to be held at Detroit February 13 and 14, and also to send delegates to the convention of the National Good Roads Association, to be held at St. Louis, April 27.

Nineteen new members were elected. William Rockefeller, James A. Burden, Jr., Lawrence Waterbury, Henry Randolph Sutphen, Dr. James C. Ayer, J. McMillan Hamilton, James E. Woodbridge, John B. Trevor, Carleton W. Nason, William E. Harman, E. Virgil Neal and Frederick Glassop, of New York City, John W. Thompson, Yokohama, Japan, and E. H. Bennett, Bayonne, N. J., were added to the active list. W. E. Hartness, Cleveland; Clifford B. Harmon, Philadelphia; S. D. Waldron, Warren, Ohio; William H. McKelvy, Easton, Pa., and Alfred Weed, Providence, R. I., were placed on the associate roll.

Bridgeport's New Quarters and Committees.

The new quarters of the Automobile Club of Bridgeport were opened last week with a smoker. It was attended by about forty members, and was a great success.

A legislative committee was appointed, consisting of Messrs. Frank T. Staples, Thomas Fish, Dr. Dow R. Beebe, Gregory S. Bryan and A. McNeil, jr.

A resolution was passed protesting against the change in the present Connecticut automobile law, and it was decided that a committee from the club should appear at Hartford before the committee on public safety in conjunction with representatives of other automobile interests to oppose the passage of the bill.

A good roads committee was also appointed. It consists of Frank Miller, W. S. Teel, jr., and Roderick P. Curtis. They were instructed to appear before the Board of Apportionment and urge the necessity of a liberal appropriation for good roads.

After the transaction of this business the evening was given over to an interchange of experiences, chiefly of a humorous nature.

Fined Scorcher and Manufacturer.

Parisian ways are frequently quite beyond understanding. A chauffeur was recently arrested and sent to prison for two days for excessive speeding. Then a plate on the body of the vehicle revealed that M. Pieper was the manufacturer of the criminal car, and he was promptly fined for building a vehicle capable of such delinquencies.

Highly indignant at this new rendering of a manufacturer's liability, he took the matter to the Appeal Court. Their decision is that the maker of an automobile is not necessarily criminally responsible for the speed it attains. There is a nasty reservation about that word "necessarily," which will doubtless lead to the matter being refought in the courts.

Motor Cars vs. Ice Yachts.

With a broad sheet of smooth ice for a roadbed automobiling possesses, in addition to its other charms, that of novelty. C. A. Benjamin, of Syracuse, has been testing the matter this winter, and is enthusiastic over it. He makes use of Onondaga Lake, and is so impressed with the speed possibilities of the course that he believes the world's mile straightaway record could be broken on it. He says that he has no trouble whatever in running his car straightaway at top speed over the frozen lake's surface. He said he also got a lot of fun out of racing against ice yachts. He could go straightaway to a given point, and they would have to tack. Under these conditions it made a pretty even match.

Proved its Value in Postal Service.

Whenever the Oldsmobile is spoken of before the Detroit (Mich.) postal authorities they smile broadly. These little cars did much to get rid of the excessive accumulation of Christmas mail, completely overshadowing the horse and wagon method of delivery. Indeed, the postmaster was so enthusiastic over their work that he declared his belief that three Oldsmobiles will do the work of fifteen horses. The illustration shows one of the regular stock runabouts, equipped with a mail box and ready to start on its route, fearing neither snow nor any other of the many varieties of weather the Detroit winter produces.



First of French Road Races.

February 22 has been fixed by the Automobile Club Bernais for the Palois reunion. The race will be from Pau to the Department of Hautes Pyrenees, then back to Pau and along the Bordeaux Road to the limit of Gers, back again to take the Bayonne Road up to that of the Landes at Puyoô. The finish will be at the entrance of the National Park, altogether a run of 225 kilometres.

Good Roads; Poor Prospects.

H. T. Eisenberg, of Chicago, has just returned from the Island of Jamaica and relates some interesting automobile experiences which he had while there, but does not hold out much hope of the demand that is in prospect. He made one run from Kingston to Newcastle over the Military Road. The run is a hard climb of twelve miles, 4,000 feet being ascended in this distance. Mr. Eisenberg made the run with a friend, in a Locomobile runabout, in just four hours. Another trip was made to Port Antonio, from Jamaica, in four hours, being a little less than the railroad running time between these points.

Mr. Eisenberg states that the Locomobile created a great deal of excitement on the Island, but that so far as business is concerned, there are few people who have money to invest in automobiles. Most of the army officers live well up to their income. The roads on the Island are very good, although there are many curves which make very high speed impossible.

When Fuel Cost Varies.

"It is remarkable what a difference there is in the consumption of supplies when my chauffeur is in charge of my car and when he is away," remarked an autoist to the Motor World man the other day.

"My bills for gasolene and lubricating oil are rather high, it seems to me, and when I take the car out for a day's run there is a big difference. A fifty-mile run, for example, will be accomplished without half emptying my gasolene tank, while if my chauffeur drove it would not last the run out. That is to say, a very rough calculation of the miles run and the gasolene purchased would indicate such a result. I never see the tanks refilled en route—that is always done in the garage.

"It does look odd, and some day when I have a little spare time I am going to look into the matter."

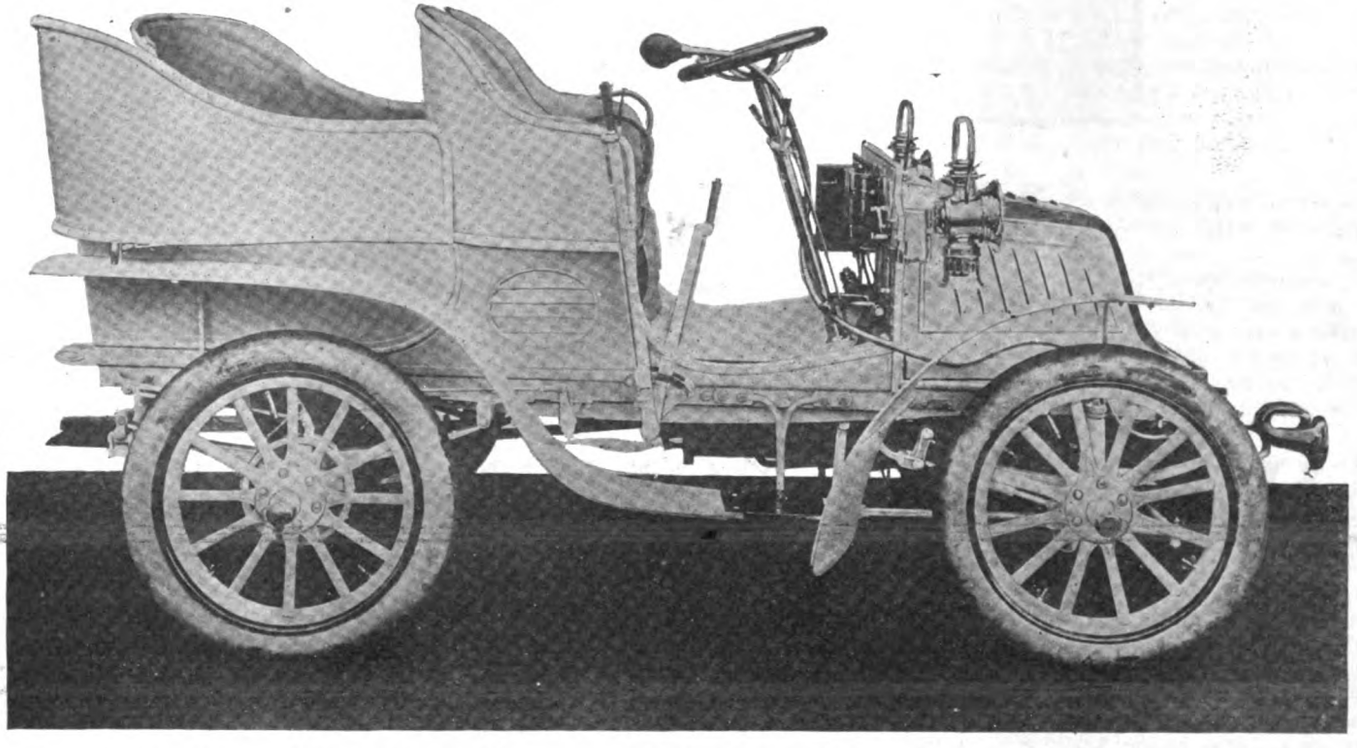
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Noiseless One, Two and Four Cylinder Types. 6 and 8 Horsepower Motorettes, 3 speeds and reverse. 12 and 16 Horsepower. Tonneau, 4 speeds and reverse. Bevel gear, direct drive on high speed, gasolene tank and can made non-explosive by safety device as used in German army, all steel parts made of Krupp steel, four oiling devices. We invite inspection. Instruction given to intending purchasers. Compare our prices with others. All duplicate parts in stock. All cars single lever control, double suspension. Trucks and Delivery Vans.

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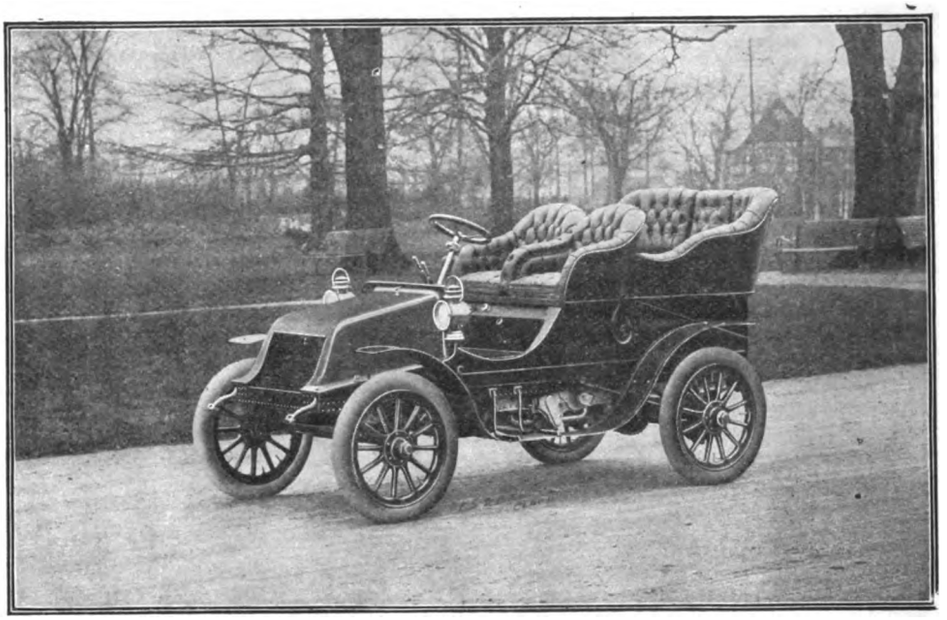
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If you do not appreciate the vital difference between superficial perfection and construction that is honestly good and thoroughly scientific from wrist-pins clear out to the last coat of finishing varnish, then you will not be especially attracted by the new twenty horse-power

WINTON TOURING CAR

We hope, however, that you will recognize our latest successful efforts and accord this new model the consideration it deserves. You who have been conscious of the rapid development of the successful American automobile, who have watched it through its various stages since the time—years ago—when Mr. Alexander Winton ran upon the roads his first "horseless carriage," will recognize the great strides we have made toward the goal of perfection in automobile building, and can appreciate in no small sense the genuine pride we feel in this latest triumph.

It is not intended as a "sensation." It does not incorporate a vast number of rare features for which we, in justice, can claim no more than theoretical excellence. Its construction does not embody a vast number of untried experiments, and we do not, therefore, ask anyone to share in a manufacturer's gamble. In presenting this model we give the very essence of practical and thoroughly tried out experience.

Consider the matter of delivery: During the current season we will be able to manufacture just one thousand of these twenty horse-power Winton Touring Cars. A liberal percentage of the total output has already been sold. Supply will not meet the demand, of this we are quite sure. Would it, therefore, not be an act of wisdom to file your order early and allow some one else to be disappointed as the result of procrastination?

THE WINTON MOTOR CARRIAGE CO.

FACTORY AND GENERAL OFFICES

CLEVELAND, U.S.A.

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JURY FAILED TO AGREE

Long Island Motorphobes Balked by Strong Testimony But Case Will be Tried Again.

Much interesting testimony anent the crusade of the Long Island Highway Protective Association against automobilists was brought out at Hicksville, L. I., last week. The case of Paul Verget, chauffeur for Cord Meyer, was being tried, and even a Long Island jury was unable to agree as to his guilt. He will be tried a second time on February 20.

One of the deputy sheriffs who made the arrest testified that out of 1,000 automobiles he had timed only seventeen had exceeded the legal limit. Another deputy testified that he had been hired to watch automobiles only, leaving horse driven vehicles alone. A surveyor said that the measured course where the alleged offense was committed was No. 35. For the defense it was claimed that the car was coasting when the arrest was made.

The trial took place in the Hicksville Town Hall before Justice Augustus T. Remsen and a jury. This was the second time Verget has been arraigned before Justice Remsen on the same charge of violating the automobile speed law. The first time he was brought before the Justice it was found that there was a clerical error in the complaint and it was withdrawn and a second complaint sworn to and the warrant issued and served.

Ex-Judge Joseph Steinert appeared for Verget and Meyer and George B. Stoddart represented the Long Island Highway Protective Association. The first witness sworn was William H. Seaman, of Glen Cove, the civil engineer and surveyor, who laid out the one-eighth-mile course over which Meyer is alleged to have exceeded the speed limit. Seaman said that this course was No. 35 and had been surveyed by him and was correct; he said it commenced on the Jericho Turnpike about 95 feet west of Hubbs' lane and ended in front of John White's residence.

Daniel V. Titus, a special deputy sheriff, testified that he was stationed at the east end of the course on November 1 and gave the signal to Deputy Sheriff John Garvin just before Mr. Meyer's automobile crossed the line. He said he waved a handkerchief on the end of a pole. He stated on cross-examination that he was seated on the ground inside of the fence and was not in the open highway. When asked if he was paid by the protective association he said that he was not to his knowledge, but received his pay from Mr. Meehan, of the District Attorney's office, and supposed that the money came from the District Attorney. He said that he had not been told to watch for any violations of the speed law as regard horses.

John Garvin, a special Deputy Sheriff, of Oyster Bay, testified that he was stationed at the central stake or the one-eighth of a mile point and it was his duty to time the automobiles, and that on the day referred to he had received the signal from Titus, and when Mr. Meyer's automobile crossed the line he saw that his stop watch gave the time for the one-eighth at 15½ seconds, and that he signalled to Officer Bloxsom at the west end of the course to arrest the chauffeur. When cross-examined he said he was not on the highway, but in the yard of John White. He denied that he knew that he was paid by the protective association. His watch was an ordinary stop watch and was tested every two or three days by Mr. Meehan, who possessed a better timepiece. H could not say how fast an automobile was going without the aid of his watch and would not swear to the speed and relied solely upon his watch. He said he had timed about one thousand automobiles and out of that number only about seventeen exceeded the speed limit. He acknowledged that just prior to Mr. Meyer passing another automobile had gone over the course at a forty-mile clip, but the chauffeur was not arrested, as he would not stop for Officer Bloxsom when ordered to do so.

Counselor Steinert asked the Justice for an interpreter for Verget, as he could only speak French. Counselor Stoddart recalled Officer Garvin to prove that Verget could speak broken English, as he had done so in Justice Franklin's court at Oyster Bay. Justice Remsen refused an interpreter for Verget and Counselor Steinert refused to place him on the stand.

Cord Meyer was the last witness, and the only one for the defense. Mr. Meyer said that he had driven his automobile from New Suffolk that day, starting at 9 A. M., and had stopped one-half hour at Smithtown for lunch, and that it was about 2.30 P. M. when he was arrested at Jericho, showing that he had not traveled more than fourteen miles an hour on the entire trip. He said the machine was an eight-horsepower and not capable of traveling more than twenty miles an hour and that at the time he was stopped the machine was thrown out of gear and was simply coasting, as they had come down a small hill before arriving at the staked course. He could not swear that he was going more than twenty miles an hour at the time.

The jury, composed of Henry F. Huettner, Peter O'Brien, Frank Marrs, Adolph Fleischaurer, William Braun and James H. Seaman, were not charged by the Justice, although Counselor Steinert asked that certain points should be made clear to them. The jury was out nearly an hour and finally reported that they could not agree, four standing for conviction and two for acquittal.

The jury was excused and another jury drawn. The next trial will be held on Friday afternoon, February 20, at the same place.

Mr. Meyer said that he had never had any trouble in his own town and he always made it a point to give the driver of a horse the benefit of the best part of the road and thought that was proper at all times. He said that he had to suffer for the reckless driving of others, as the people looked upon all as bad because a few were.



A GERMAN IDEA OF THE SITUATION.

Timid Horse; Sympathetic Jury.

Common sense appears to have had little to do with a verdict for $600 rendered at Portland, Me., last week in an alleged automobile runaway suit. The plaintiff was a woman, described as young and pretty, and she asked for $2,000 damages for injuries received. Testimony was introduced showing that the horse which ran away with her was one not safe for a woman to drive. But the intelligent jury found for her, although for only $600.

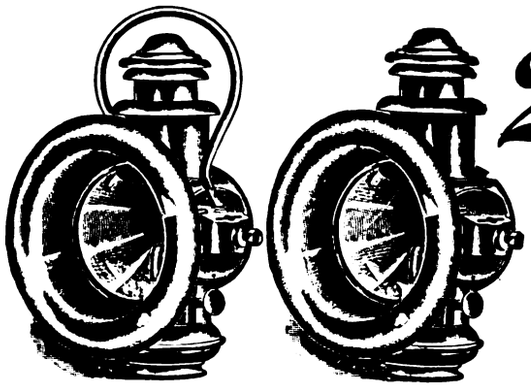
The suit was brought by Mrs. Lombard, of South Portland, against Flavel A. Chaplin, of Portland.

Mrs. Lombard's story, told after the jury had been escorted to the junction of State, Congress and Pine streets, to take a view of the location, was, in brief, that on the day mentioned in the writ she and her mother, Mrs. Thomas, were driving up State street in a box buggy. Their horse was of a kind disposition and under perfect control. When they were passing through State street they saw the defendant's automobile turning the corner of Pine street and coming toward them. Mrs. Lombard called for the whip, but finding that the automobile was not lessening its speed she returned the whip and kept a tight grip on the reins. Just before the machine passed, making a noise and emitting steam, the horse pranced, and as it passed she swerved, bolted toward the side of the street and ran away. Turning into Congress street, the wheels struck the car track and the carriage was overturned.

On cross-examination Mrs. Lombard said that once when the horse was fastened by a hitch weight in Middle street she was frightened by an automobile and ran away. The defence put in its evidence, and many witnesses were called to show that the accident was due to the horse, which was said to be not a proper animal for a woman to drive. L. A. Goudy and Adam P. Leighton, who had owned the animal, testified that they did not regard the horse as safe for a woman to drive who was not an expert horsewoman, and that they had found the animal easily frightened and had sold her on that account.

Counsel for the defendant stated that the case would be appealed.

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20th Century

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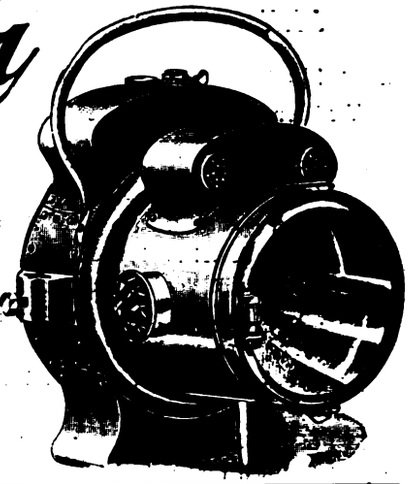
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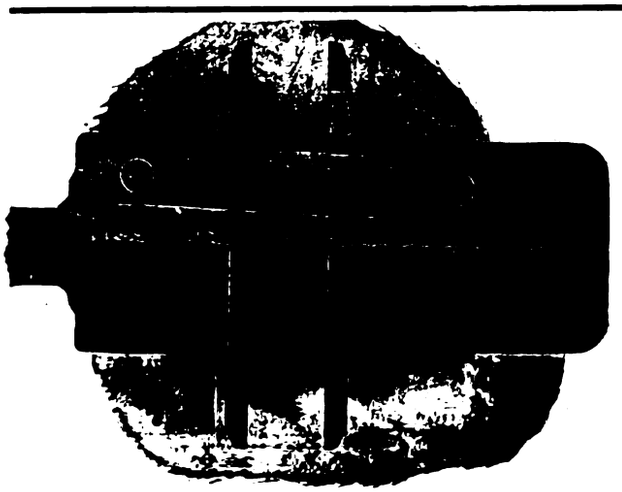
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In addition to their graphitoleo for gears and flake graphite for motors, the Joseph Dixon Crucible Co., Jersey City, N. J., report a growing demand for their graphite motor chain compound, which, being put up in three-pound cakes, is of a size and shape for general and convenient sale and use.

The compound is designed not only for application to the face of the chain, but to reach the wearing surfaces of the pivots. It is applied in this fashion: First thoroughly clean the chain by repeated immersion in naphtha or benzine. When dry place in a flat pan large enough to receive the chain when coiled up somewhat loosely, and then melt in the pan enough of the motor chain compound to entirely cover the chain. The temperature of the melted compound should be at least 180 degrees, to insure sufficient fluidity, so that it will reach the interior wearing surfaces of the chain. The chain should be moved about as much as possible to aid the composition in reaching the furthest crevices. Removing the chain, allowing it to cool and again immersing in the compound will aid materially in bringing about this result. When finally removed the surplus compound is wiped off and the chain allowed to become cold. Never use the chain before perfectly cold, as the material would then be forced out of the joints. This treatment will surround each pivot with a bushing of excellent lubricating quality, hard and durable.

Deals With the Autocar.

In style befitting a handsome product, the merits of the 1903 Autocars are set forth in a catalogue that it is a pleasure to pick up. It is simple and tasteful and gives concisely all the details of construction. Attention is called to the improvement in the transmission gear and the enlargement of the tonneau. This is one of the chainless types, using a bronze bevel gear. The drive from the transmission case to the rear axle is by means of two steel cardan joints (with a hollow bronze cross piece for receiving lubrication), with the shaft having the bevel gear. Five models, a tonneau, a top runabout with rumble seat, the same without the top, a runabout with top and a rear boot and the same without the top, are shown by the cuts, and a splendid top view of the chassis also is shown.

Look to the Brakes.

The brakes of an automobile may in various respects be compared to the safety valve of a steam boiler. Both are safety appliances, and must, to be reliable, be adjusted perfectly and kept in perfect repair. In stationary steam plants the safety valve is periodically lifted off its seat by the engineer or fireman to insure its not sticking to the seat by rusting and thus giving a false sense of security. Similarly the brakes of automobiles, especially those running in hilly districts, should be examined periodically by their owners.

Labouchere on Speed Limits.

So excellent a person as Henry Labouchere is now advocating that the speed limit for automobiles in England be raised. In London Truth he says:

"Has not the time come when the twelve mile limit of speed ought to be reconsidered altogether? On many a country road, with a clear course and no danger from side turnings, there is no danger in twenty-five miles an hour. The present maximum limit is absurd, because it takes no account of the fact that a properly built automobile is far better under control and can be stopped 'dead' more quickly than any horse vehicle going at the same pace.

"My impression is that the safety of the man in the street would be quite as well, and probably better, provided for by imposing severe penalties on reckless driving, with heavy responsibilities for accidents so caused, and leaving the question of recklessness to be judged entirely by the circumstances of each case, than by setting up a statute as an arbitrary standard of maximum speed."

Draught of Honeycomb Doubted.

"The statement that the induced draught or honeycomb type of radiator is more efficient than the old pattern is one not justified by experience, when the car is in motion, whatever may be the heating on a stationary vehicle," says a doubter of this Mercedes feature.

"Its use reduces the quantity of water carried, but that is not necessarily an increase in efficiency. The old system of radiator has reached perfection, so far as efficiency is concerned, and the advantage must be sought in other and secondary considerations. There are authentic cases of the distance of 500 miles being covered without any necessity for refilling the tank, during the whole of which distance the water has kept perfectly cool. That is complete efficiency. Weight may be reduced, but complication and risks of injury inevitably enter when air is induced through a honeycomb by a fan."

Road not Owned by Rockefeller.

John D. Rockefeller, jr., on his father's estate at Pocantico Hills, frequently orders automobile drivers to leave the place. Large signs have been erected bearing this notice in large black letters: "No motor cars allowed."

Young Mr. Rockefeller and his wife, driving to the Tarrytown station recently, met Postmaster George E. Johnson, of North Tarrytown, in an automobile. They were on the old Bedford Road, which passes through the Rockefeller property, but which was recently deeded to the village. Young Mr. Rockefeller evidently forgot that. He stopped the postmaster and informed him that no motor cars were allowed there.

Mr. Johnson replied: "I beg your pardon, sir, but this is a public highway."

Mr. Rockefeller looked around in surprise and drove on without a word.

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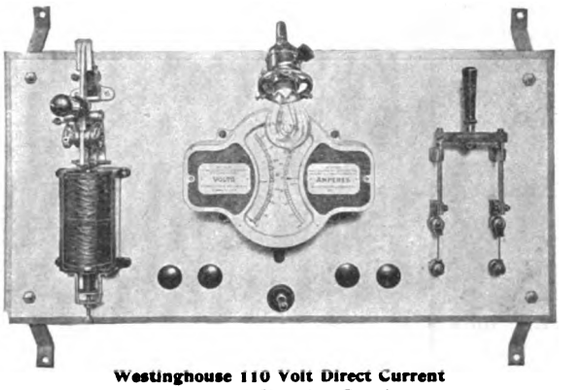
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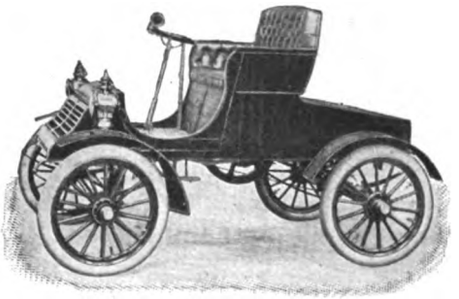
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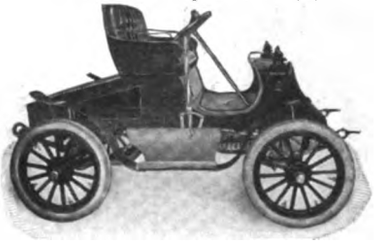
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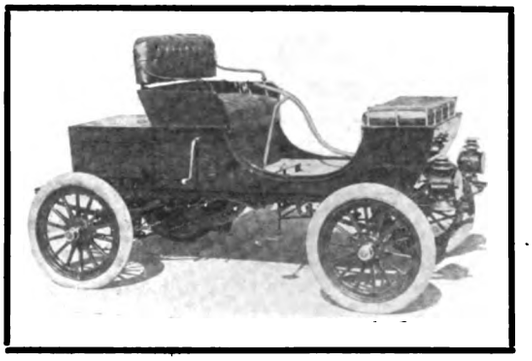
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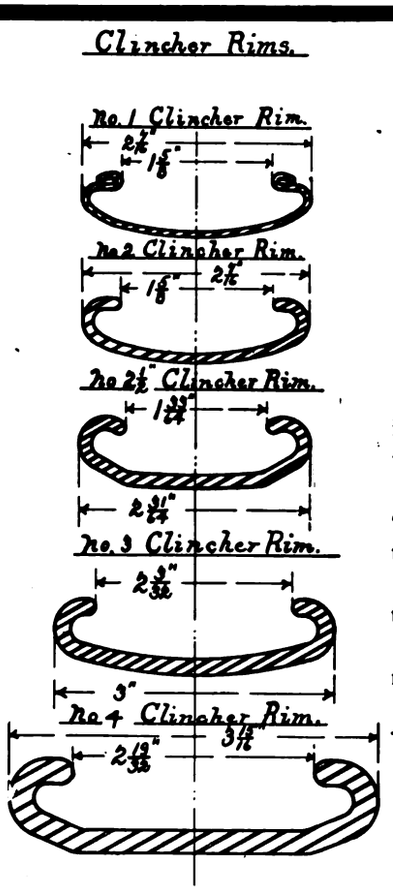
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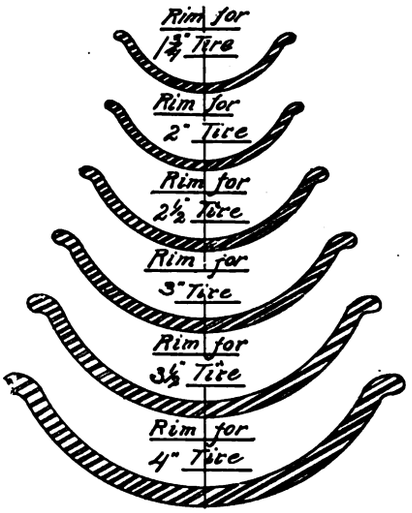
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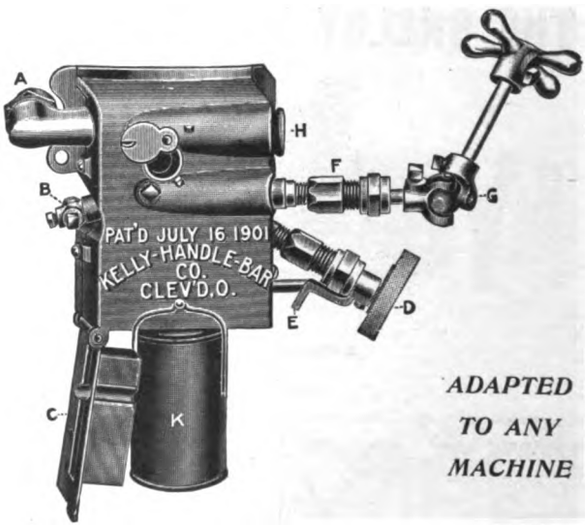
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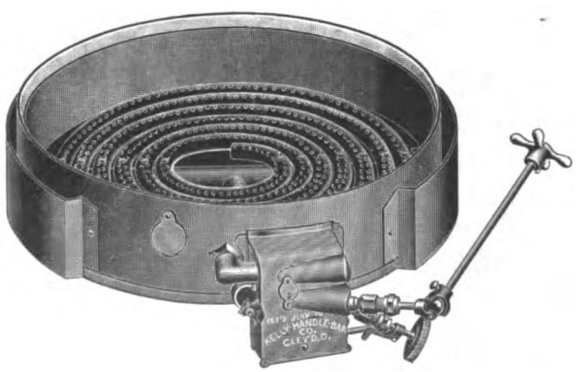
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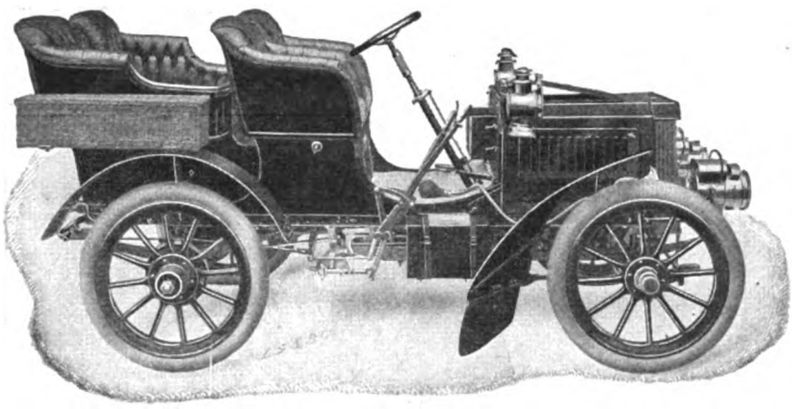


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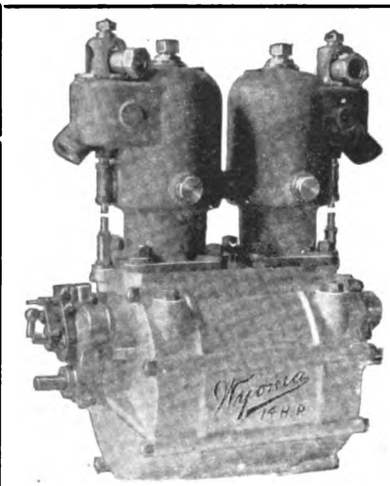
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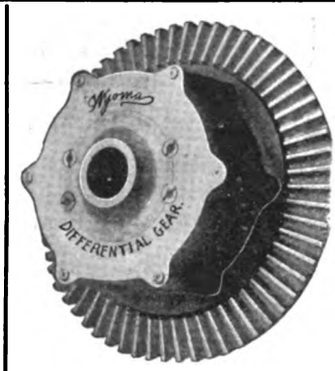
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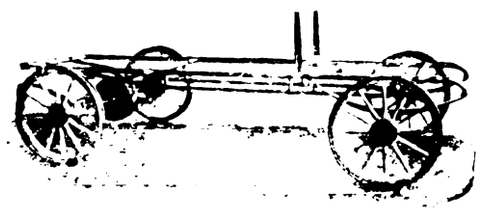
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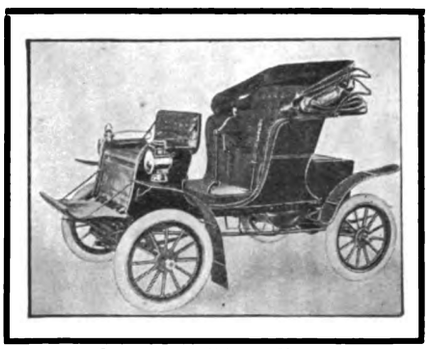
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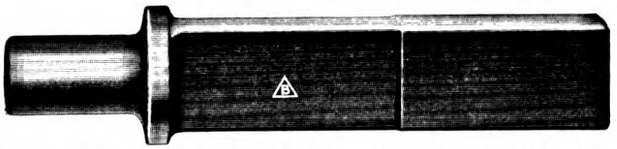
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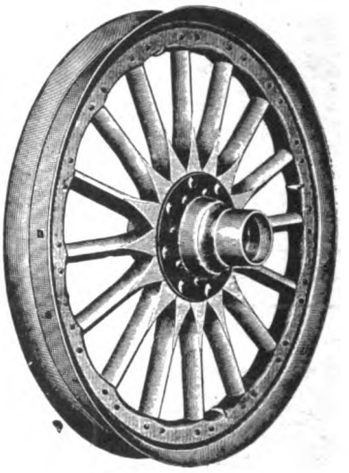
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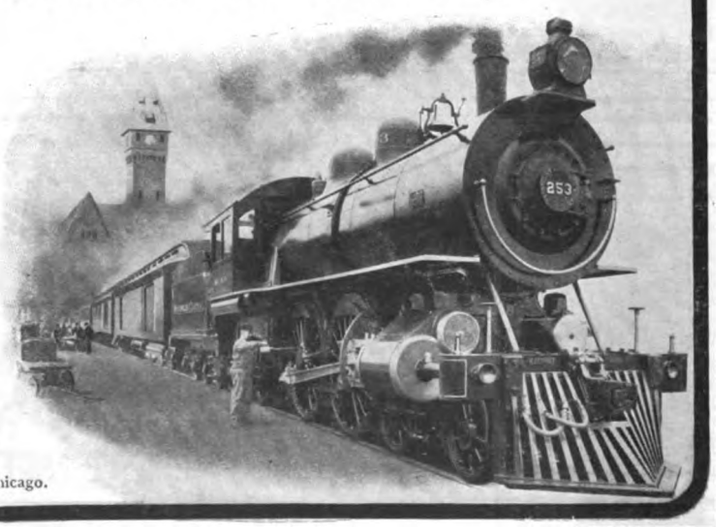
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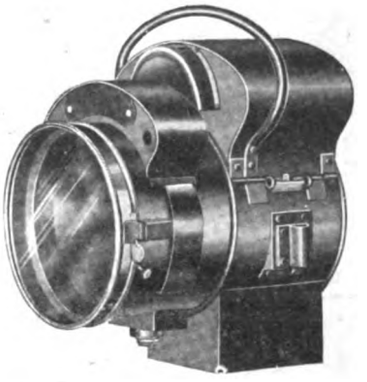


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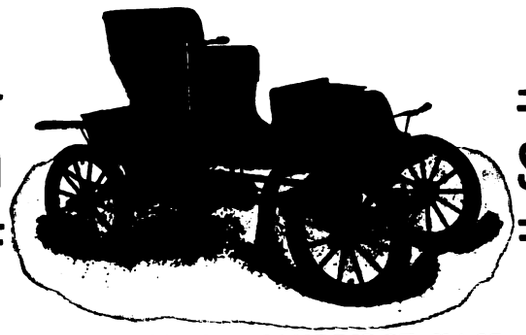


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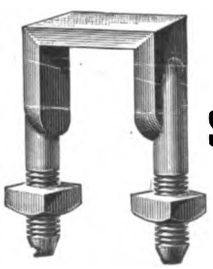
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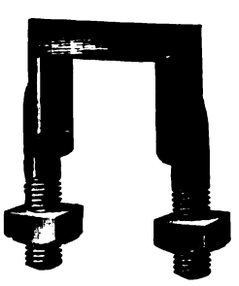
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The Week's Patents.

719,327. Transmission Gear Mechanism. Ralph B. Hain, Los Angeles, Cal., assignor to Auto Vehicle Co., Los Angeles, Cal., a corporation of California. Filed July 30, 1902. Serial No. 117,651. (No model.)

Claim—1. In a transmission gear mechanism of the character described, the combination with the main drive shaft, a pinion fixedly held thereon, a central drum loosely mounted on said drive shaft, and having a laterally extending hub, a pair of drums disposed one at each side of the central drum, the drum being loosely mounted on the drive axle, the drum being loosely mounted on the hub of the central drum, a sprocket pinion on said hub, a sprocket rim on the body of the drum, brake devices co-operating with the drums, the central drum having a number of transverse journal bearings, a shaft in each of said bearings, a large gear on one end of the shafts, a small gear on the other end, and held to mesh with the pinion on the drive shaft, the drum having an internal annular gear rim, held to mesh with the large gear on the shaft mounted in the central drum, an axial gear on the drum held to mesh with the small gears on the central drum supported transverse shafts, all being arranged substantially as shown and described.

719,328. Governor and Throttle Valve Controlling Mechanism. Ralph B. Hain, Los Angeles, Cal., assignor to Auto Vehicle Co., Los Angeles, Cal., a corporation of California. Filed July 30, 1902. Serial No. 117,652. (No model.)

Claim—1. A mechanism of the character described, comprising in combination with the engine drive shaft, and the engine throttle valve, a governor device mounted upon and operated by the crank shaft, and a manually operatable lever mechanism separate therefrom, said governor device and lever mechanism having a common connection with the throttle valve, and each being arranged to operate independently of the other for opening and closing the said throttle valve, as set forth.

719,407. Combined Regulator and Safety Mechanism for Explosive Engines. Leonidas G. Woolley, Kenton, Ohio, assignor to the Magneto Electric Co., New York, N. Y. Filed February 28, 1902. Serial No. 96,192. (No model.)

Claim—1. In an electric generating mechanism of the character stated, the combination with the igniting means including the member 2, the terminals 1 1a mounted thereon, and the lever 3 having a bridge carrying contacts to engage the terminals 1 1a, said lever being pivoted near its outer end whereby to normally gravitate to bring the contacts to a closed position, the outer end of said lever terminating in a heel portion 3a; of the main shaft, the centrifugal governor mechanism connected thereto and controlled by the rotation thereof, the vibratory lever U, said lever having an arm u, and the lever 5 detachably connected with the lever arm u, and having its outer end arranged to engage the heel of member 3 when the speed of the shaft becomes excessive or beyond a predetermined point, a valve regulating means comprising the shifting lever u' rigidly connected to the vibratory lever U, and extending downward, the disk s engaged by said shifting lever, the cam r x, and the valve, all being arranged so that the valve is shifted at the same time the lever u engages the heel of the member 3, as set forth, substantially as shown and described.

719,418. Electric-Accumulator Plate. Auguste Bainville, Nanterre, France. Filed July 14, 1902. Serial No. 115,462. (No model).

Claim.—An electric accumulator consisting of a number of rods separated from each other by a removable corrugated sheet of perforated insulating material arranged in such manner as to cover the face of one rod and the back of the next.

719,420. Steam Boiler. Robert W. Barton, Chicago, Ill., assignor of fifty-one one-hundredths to Evert Rich, Chicago, Ill. Filed Oct. 16, 1902. Serial No. 127,535. (No model.)

Claim.—1. A steam boiler composed of a plurality of units, each formed of two coils of pipe, the central or inner portion of the lower coil of each unit being continuous with the central or inner portion of the upper coil of each unit, while the outer portion of the upper coil of each unit is continuous with the outer portion of the lower coil of the adjacent unit, substantially as described.

719,425. Process of Making Self-Mending Tires. John W. Blodgett, Chicago, Ill., assignor to the N Tire Co., Chicago, Ill., a corporation of Illinois. Filed July 1, 1902. Serial No. 113,977. (No specimens.)

Claim.—The method of inserting a self-mending material in a pocket in a tire which consists in placing the deflated and flattened endless tube having the pocket therein in a trough-like mould whose available inner width is equal to the thickness of the entire tube at that time plus the desired thickness of the layer of self-mending material, said mould being heated to a temperature at which the self-mending material can be pumped; and in forcing the self-mending material heated substantially to the same temperature into such pocket while the tube is in the mould and until the pocket is filled at completely as the width of the mould will permit, substantially as described.

719,486. Carbureter for Internal-Combustion Engines. Frederick H. Messinger, New York, N. Y. Filed Oct. 19, 1901. Serial No. 79,225. (No model.)

Claim.—1. In a carburetter for internal-combustion engines, the combination with a vaporizing chamber through which the air is drawn upwardly, a vaporizing nozzle in said chamber, a fluid supply for said nozzle, a horizontally arranged partition in said chamber below said nozzle, air passages around said partition, and an opening in the centre of said partition in line with the nozzle for directing a jet of air upwardly upon the nozzle, substantially as set forth.

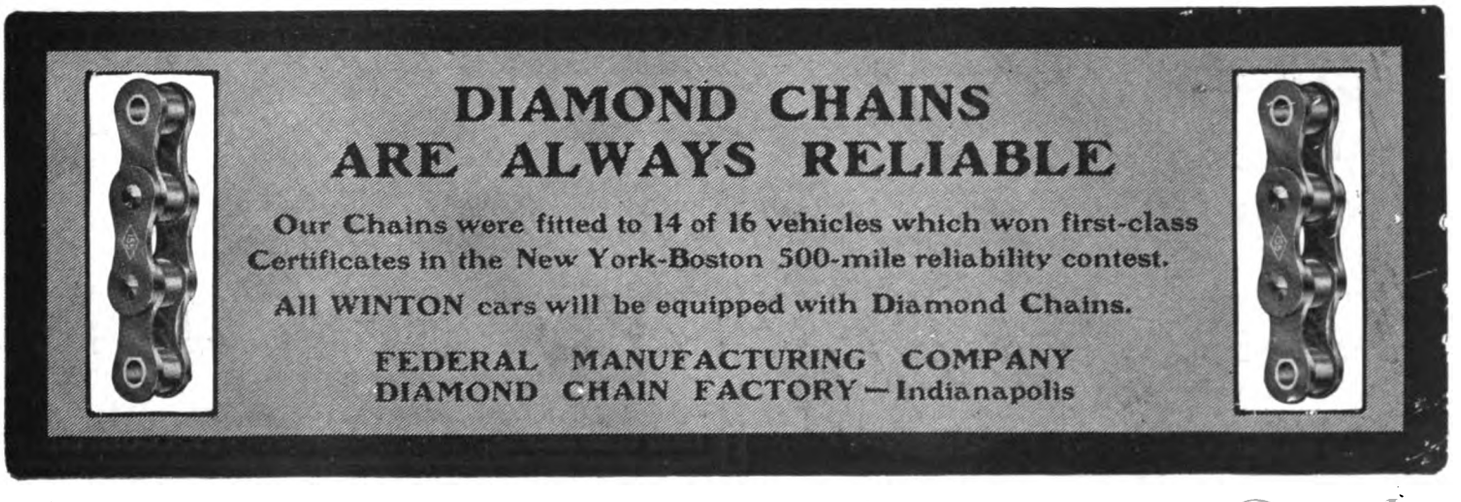
719,536. Vaporizer or Carburetter for Explosive Engines. Henry W. Tuttle, Philadelphia, Pa., assignor to John M. Scott, Philadelph'a, Pa. Filed Jan. 13, 1902. Serial No. 89,449. (No model.)

719,547. Explosive Engine. John Willoughby, Brooklyn, N. Y., assignor of one-half to George W. Bayley, Brooklyn, N. Y. Filed Mar. 26, 1901. Serial No. 52,924. (No model.)

Claim.—1. An explosive engine having two cylinders arranged opposite and at an inclination to each other and provided with feed and exhaust ports, pistons therein, a crank shaft and connecting rods extending between the crank shaft and the pistons, the said cylinders each having an air chamber and the pistons having supplementary parts working in said air chambers, to draw the air into air chambers and to force it therefrom, an air reservoir connected with the air chambers, and receiving compressed air therefrom, unobstructed passages leading from the air reservoir in opposite directions and connected with the feed ports of the respective cylinders, and a fuel reservoir connected with the passages leading from the air reservoir at a point adjacent to the cylinder feed ports.

719,562. Steering Gear for Automobiles. Alanson P. Brush, Detroit, Mich., assignor of one-half to Cadillac Automobile Co., Detroit, Mich., a corporation of Michigan. Filed Nov. 21, 1902. Serial No. 132,220. (No model.)

Claim.—In a steering gear the combination



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with a steering pinion of a rack bar meshing with said pinion, a frame in which the rack bar reciprocates, and an eccentric bushing in said frame about the rack bar, said bushing cut away intermediate its extremities and having a limited rotation about the rack bar to adjust the rack bar against the pinion.

39,707. Automobiles and Parts Thereof. The Pan-American Motor Co., Mamaroneck, N. Y. Filed December 11, 1902.

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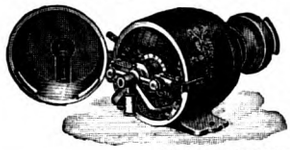
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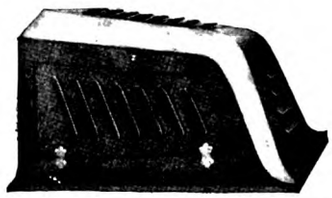
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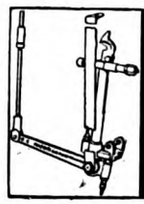


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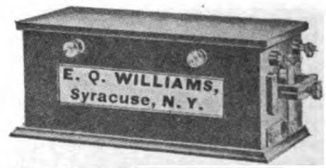
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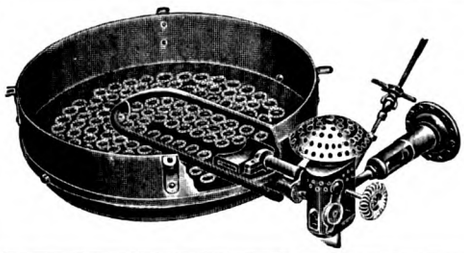
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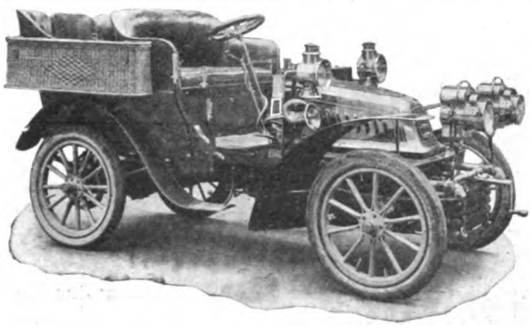
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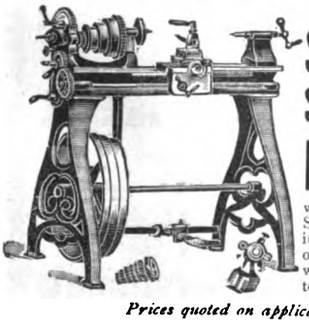
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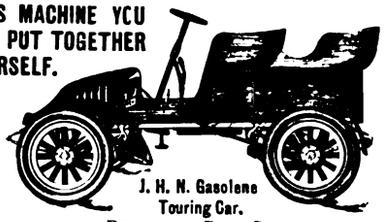
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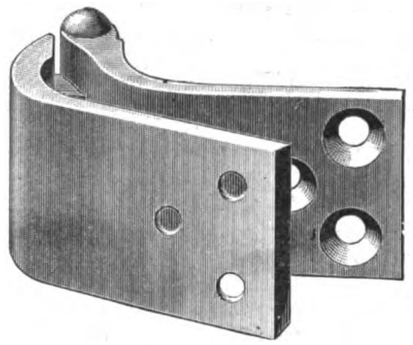
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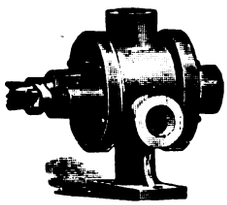


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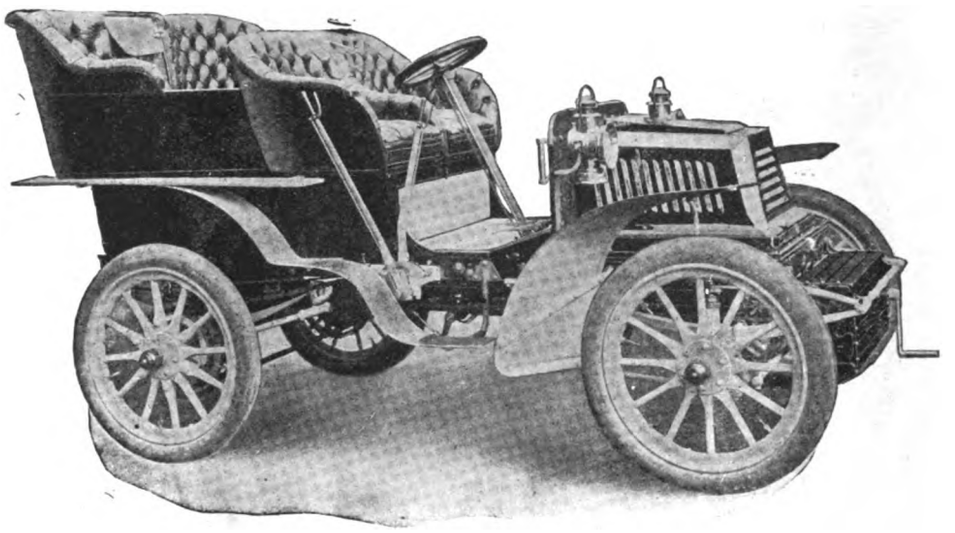
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THE SEARCHMONT

THE SEARCHMONT



1903 MODEL TYPE VII.

American Engineers
American Methods
American Mechanics
American Brains

American Ingenuity
American Material
American Workmanship
American Money

Combined with American Enterprise have produced

America's Leading Automobile

and the price is only $2,500, not $5,000 or $10,000

IT WILL PAY YOU TO INVESTIGATE THE NEW SEARCHMONT BEFORE PURCHASING

SEARCHMONT AUTOMOBILE CO.,

PHILADELPHIA, U. S. A.

AGENTS:

JOHN WANAMAKER, New York and Philadelphia.
H. B. SHATTUCK & SON, Boston.
GITHENS BROS. CO., Chicago.
CLEVELAND AUTO. & SUPPLY CO., Cleveland.
W. H. WEBER, Detroit.
ROCHESTER AUTOMOBILE CO., Roch ster.

THE SEARCHMONT

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THE PLEASURES OF AUTOMOBILING

WILL BE GREATLY ENHANCED BY THE USE OF

HARTFORD or DUNLOP

PNEUMATIC TIRES

The ORIGINAL and "MODEL" TYPES of SINGLE AND DOUBLE TUBE TIRE CONSTRUCTION

Appreciating the fact that requirements vary as to Single Tube and Detachable Tire Construction, we offer the most reliable of both types—*The Honest Standards.*

THEY WERE BEST YEARS AGO. AND YEARS OF INTELLIGENTLY PERSISTENT, CAREFULLY DIRECTED EFFORT HAS MADE THEM BETTER TO-DAY.

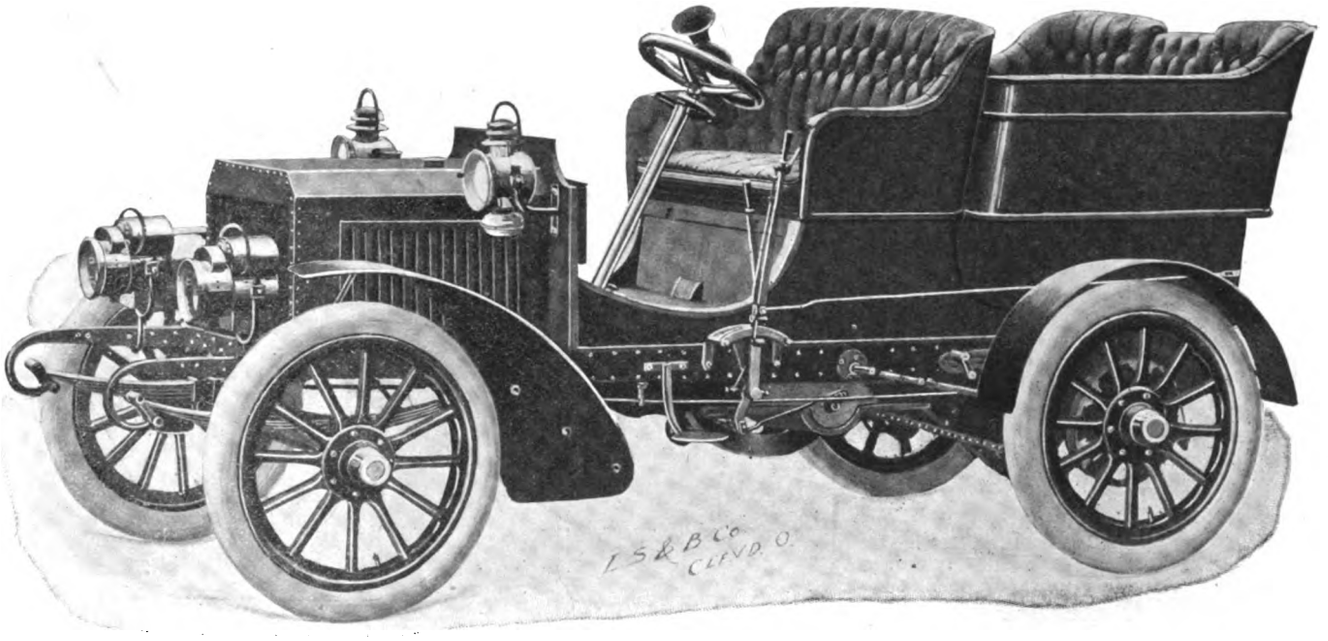
Where Quality is desired—where Comfort, Durability, and Protection against Annoyances is wanted—where All-'round Satisfaction is demanded—these tires should be adopted. Let us prove this to you by sending you signed statements from some of the most prominent makers and users in this country.

The Hartford Rubber Works Company, Hartford, Conn.

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THE STEARNS CAR

Received a lot of very favorable comments at the show.



The style and general design is right. The motor is powerful, with a perfect throttle, and runs silently and with no vibration. The attachments on the dash and controls at the wheel are good points, too. The small tube radiator is ahead of the time, and considering all things, **STEARNS CARS are worth more than they cost.**

Cadillac Auto. Co. of Ills.,
1312 Michigan Avenue, Chicago, Western District.

F. B. Stearns Co., Cleveland, O.

Elmore Exclusiveness

rests not alone in the successful use of the ELMORE TWO-CYCLE MOTOR, but in many other features of equal merit.

IT IS A DISTINCTIVELY AMERICAN CAR.

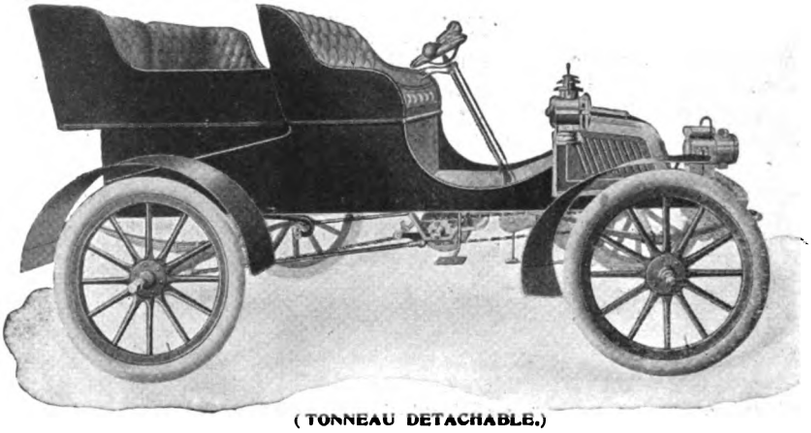
Men may pay more, but they cannot get a better one.

7-H. P.

Runabout.

1200 Pounds.

$800.



(TONNEAU DETACHABLE.)

10-H. P.

Touring Car.

1450 Pounds.

$1400.

MAY WE SEND YOU CATALOG AND PARTICULARS?

ELMORE MFG. COMPANY, = Clyde, Ohio.

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GOODRICH
Clincher Automobile Tires
Original American Clincher Leads.

There were more Goodrich Clincher Double Tube Automobile Tires fitted to machines on exhibition at Madison Square Garden Automobile Show Jan. 17-24, than any other individual make of Clincher Double Tube style of tire.

HERE IS THE RECORD.

Winton Motor Carriage Company	4 machines.
White Sewing Machine Company	5 "
Peerless Motor Car Company	4 "
Pan-American Motor Company	3 "
Pope-Robinson Company	3 "
The F. B. Stearns Company	1 "
Packard Motor Car Company	1 "
Smith & Mabley Company	3 "
Berg Automobile Company	2 "
The Walter Car Company	3 "
Franklin Mfg. Company	2 "
The Shelby Motor Car Company	2 "
American Motor Car Company	2 "
Hoffman Automobile & Mfg. Company	2 "
Fredonia Mfg. Company	2 "

U. S. Long Distance Automobile Company, Locomobile Company, Geo. N. Pierce Company, Spaulding Motor Car Company, H. P. Hall Motor Company, Meyea Automobile Company, one machine each.

Baker Motor Vehicle Company, 6 machines, ALL fitted with Palmer Special Speed Automobile Tires, OUR Make. Ajax Motor Company, 2 machines, fitted with Goodrich Single Tube Motor Tires.

RECAPITULATION.

Goodrich Clincher	Tires equipped	47 machines
Palmer Special,	" "	6 "
Goodrich Single Tube	" "	2 "
		55

TOTAL 55 MACHINES.

IMPORTANT.

With hardly an exception, all machines at show using our Clincher Tires, were Heavy Touring Cars of High Power and Speed, requiring Tires of exceptional strength and quality. That is why Goodrich Clinchers were made the Tire equipment. They have been thoroughly tested and their superior merits acknowledged. Write for booklet of testimonials. Mailed to any one upon application.

THE B. F. GOODRICH COMPANY,
FACTORIES, AKRON, OHIO.

Branches:

NEW YORK, 66-68 Reade Street. CHICAGO, 141 Lake Street. SAN FRANCISCO, 392 Mission Street. BOSTON, 157 Summer Street.
BUFFALO, 9 West Huron Street. PHILADELPHIA, 922 Arch Street. DETROIT, 80 East Congress Street. DENVER, 1444 Curtis Street.
LONDON, ENGLAND, 7 Snow Hill, E. C.

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Concerning Horse Power.

There were three engines of similar size and type to the

Rambler

exhibited in motor carriages at the recent New York Automobile Show. Their makers claimed for them respectively, seven and seven and a half horse power. That claimed for the

Rambler

is six brake horse power. There were four engines of ***SMALLER*** size in similar types of carriages, all claiming ***GREATER*** horse power than the

Rambler

There were two tonneaus, carrying four or more persons, with ***SMALLER*** engines, but each claiming more horse power than the

Rambler

All of these engines are of the medium speed variety, and tested—when they are tested—under the same conditions and with similar apparatus. Excepting only the body, tires and spark coil, every part of the

Rambler

TOURING CAR is made in our own factory, subject to every test and supervision that experience has suggested. Every engine is tested before being assembled in the carriage and it is impossible to build a better or more powerful engine of its type and size than used in the

Rambler

Is it necessary to say any more about horse power?

SHALL WE SEND YOU OUR NEW CATALOGUE; IT EXPLAINS THE CARRIAGE FULLY? WRITE FOR BOOKLET "W."

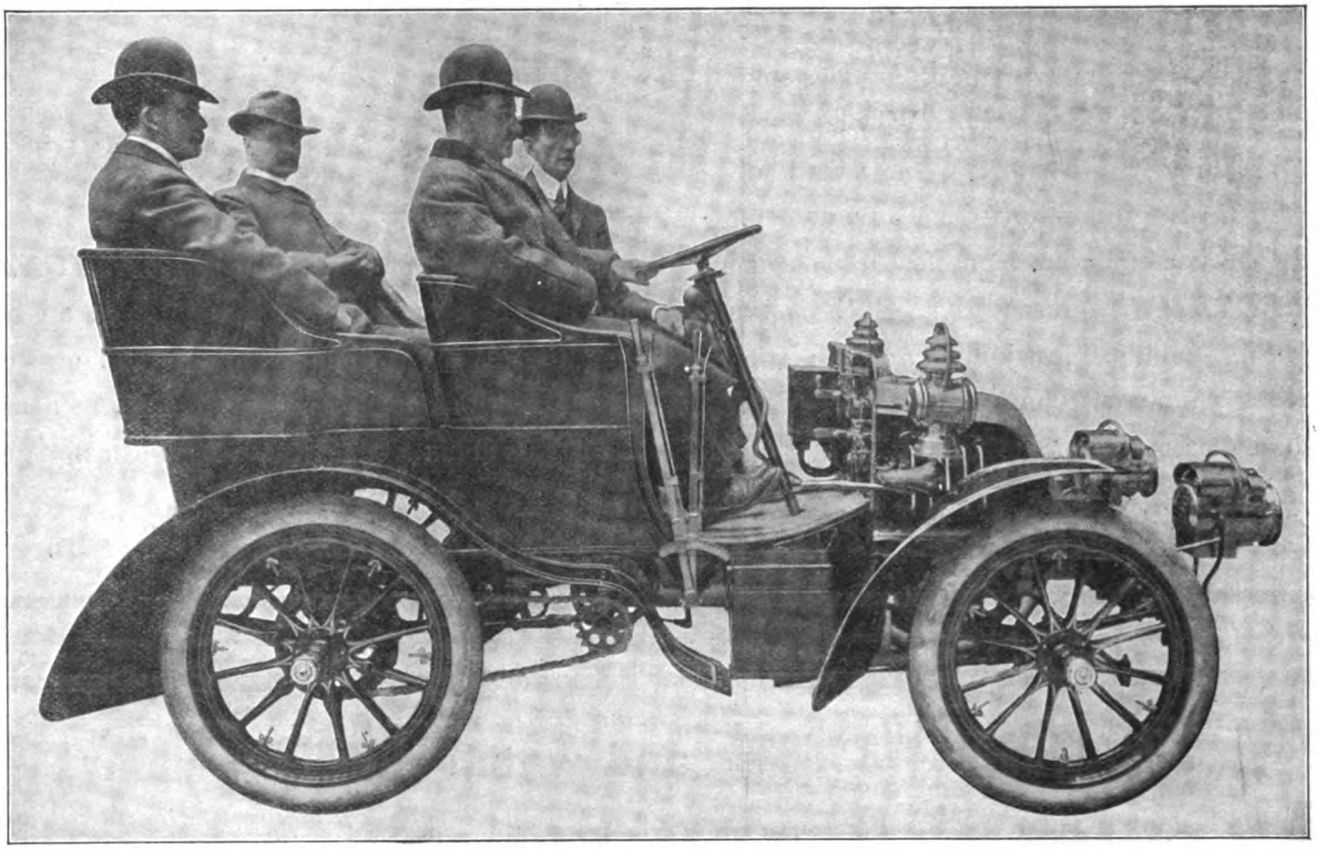
THOS. B. JEFFERY & CO., - Kenosha, Wisconsin.

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THE Locomobile COMPANY



The New 9 H. P. Gasolene Locomobile

THIS car has all the novel features of the 16 H. P. Locomobile, such as the Throttle on Steering Wheel; Valves easily removed and replaced; Kerosene Pump; Slide Gear Transmission; also the steel Chassis Construction which makes it possible to attach any desired style of body. Write for full description.

The Locomobile Company of America,

N.Y. SALESROOMS, Broadway, cor. 76th St. Factory, Bridgeport, Conn.

Branches in Chicago, Philadelphia, Boston, London and Paris.

THE Locomobile COMPANY

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An Open Letter to Automobile Dealers



You are in the business to make money. Your profits depend upon Automobiles sold by you in your territory. Why confine your selling efforts to any one kind of power? All powers have their advantages. The Electric embodies many features of practical worth with a minimum of trouble. ***NATIONAL ELECTRICS*** represent that which is best in the Electric field. To add our line, you are only showing good business judgment. Electrics are going to sell. Why spend your time talking other powers when a customer wants a ***NATIONAL?*** The National agency will prove to be a most valuable asset and money maker. Think it over and write us about our prices, terms and catalogues.

National Motor Vehicle Co.

1400 E. 22 St.
INDIANAPOLIS, IND.

See Where We Lead and watch Others Follow.

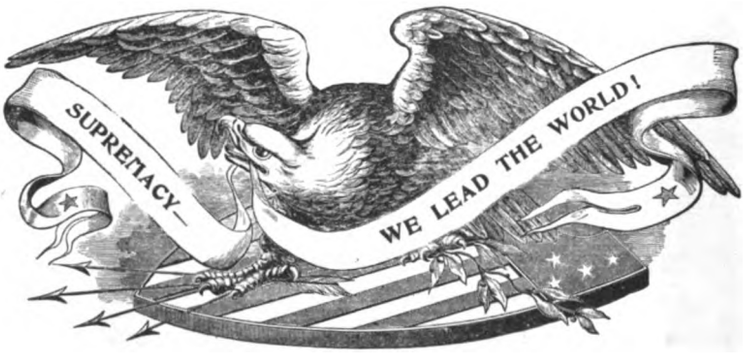
AMERICAN AUTOMATIC SPARK COIL

Operates Automatically as either a Vibrator or Plain Coil.

The "American" System of Ignition

LEADS THE WORLD.

You take no chances.



American Pocket Ammeter.

NOT A TOY.

Gives output of batteries CORRECTLY.

AMERICAN DOUBLE INSULATED MICA CORED SPARK PLUG

And a full line of up-to-date jump spark ignition apparatus.

If you desire the best, write for our catalogue.

AMERICAN COIL CO., WEST SOMERVILLE, MASS.

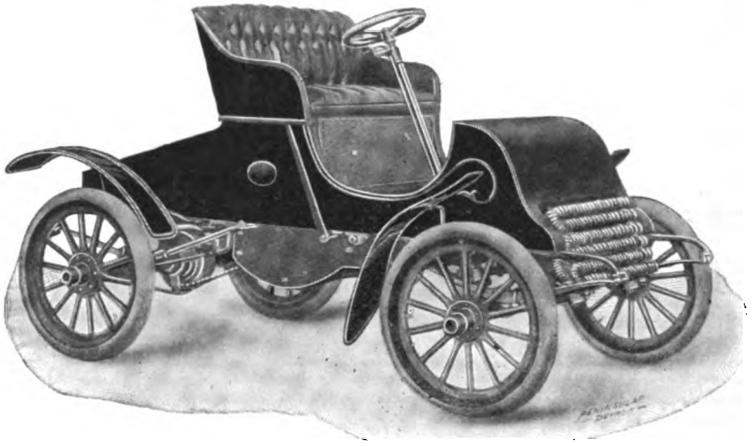
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...THE...

CADILLAC

"It's just good all over"

$750—With Tonneau, $850.



The Best Proposition for 1903

THE FOLLOWING AGENCY LIST PROVES IT:

Cadillac Automobile Co. of Illinois, Chicago, Ill.
Cadillac Co. of New York, New York City.
John Wanamaker, Philadelphia, Pa.
William E. Metzger, Detroit, Mich.
Pence Automobile Co., Minneapolis, Minn.
Conrad Mueller Co., Indianapolis, Ind.
American Cycle Mfg. Co., Boston, Mass.
American Cycle Mfg. Co., Providence, R. I.
American Cycle Mfg. Co., Washington, D. C.
Cleveland Automobile & Supply Co., Cleveland, O
Oscar S. Lear, Columbus, Ohio.
Centaur Motor Vehicle Co., Buffalo, N. Y.
Crescent Automobile Co., Jersey City, N. J.
New Jersey Automobile Co., Newark, N. J.
A. T. Wilson, Denver, Col.
R. V. Connerat, Savannah, Ga.
Michigan Automobile Co., Grand Rapids, Mich.
Houghton Implement Co., Grand Forks, N. D.
Peckham Carriage Co., Dayton, Ohio.
The Hanauer Automobile Co., Cincinnati, Ohio.
F. O. Bailey Carriage Co., Portland, Me.
Norman W. Church, Los Angeles, Cal.
R. W. Whipple, Binghamton, N. Y.
Theodore Jonas, Milwaukee, Wis.
Adolph A. Geisel, Springfield, Mass.
Birney A. Robinson, Worcester, Mass.
James Lucey, Albany and Troy, N. Y.
Fred A. Mabbett & Co., Rochester, N. Y.
Irvin W. Dill Carriage Works, Harrisburg, Pa.
Brown, Thomson & Co., Hartford, Conn.
Charles E. Whitten, Lynn, Mass.
Murphy Bros., Erie, Pa.
Hyslop Bros., Toronto, Ont.
Elmira Arms Co., Elmira, N. Y.

Catalog for the Asking.

CADILLAC AUTOMOBILE COMPANY

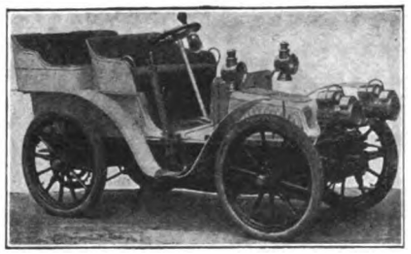
DETROIT, MICHIGAN.

WILLIAM E. METZGER, Sales Manager.

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FRENCH AND AMERICAN
AUTOMOBILES.

Agents for
THE
ELECTRIC
VEHICLE CO.



8 H. P. MORS.

Prompt Deliveries of
8, 11, 18 H. P.
MORS

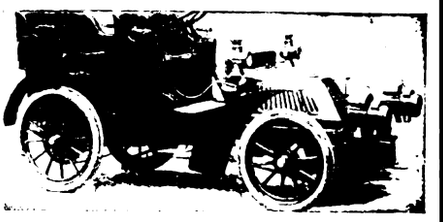
AGENTS FOR
Paris Automobile Societe Anonyme
HENRY FOURNIER, MGR

THE
CENTRAL
Automobile Co.
1684 BROADWAY.
TELEPHONE:
2397 } COL.
2398 }

REPAIRS.

STORAGE.

11 & 18
H. P.
MORS
1903 Model
Attracted special attention
PARIS AUTO SHOW.



10 H. P. PEUGEOT.

Prompt Deliveries of
RENAULT,
PEUGEOTS,
Mercedes.

OPEN DAY AND NIGHT.

LARGEST AND BEST EQUIPPED AUTOMOBILE DEPOT
IN THE UNITED STATES.

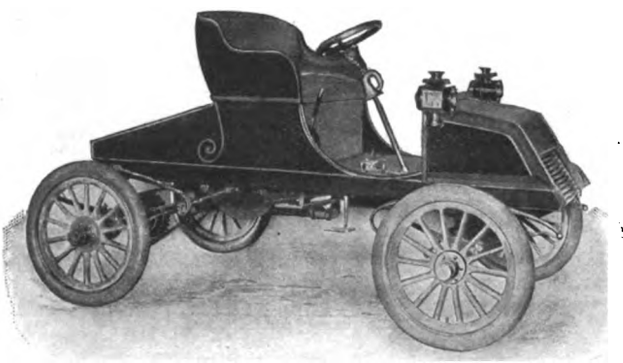
ALL KINDS OF FRENCH AUTOMOBILE PARTS KEPT IN STOCK.

ELECTRICS CHARGED AND KEPT IN FIRST-CLASS ORDER.

Service and Appearance

is what you are looking for is an automobile.
You get both if you buy

THE GENERAL.



FOR ALL SEASONS.

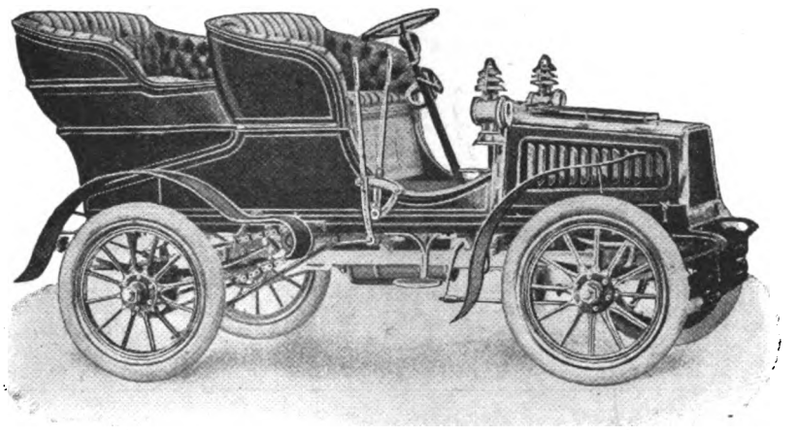
Our 8 H. P. Gasolene Runabout is constructed with a view of furnishing an absolutely reliable machine—one that can be depended upon for service at all times and on all roads.

AGENTS IN PRINCIPAL CITIES. WRITE FOR OUR CATALOG.

THE GENERAL AUTOMOBILE & MFG. CO., Cleveland, O.

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$2,000 Buys this Touring Car



"Toledo"

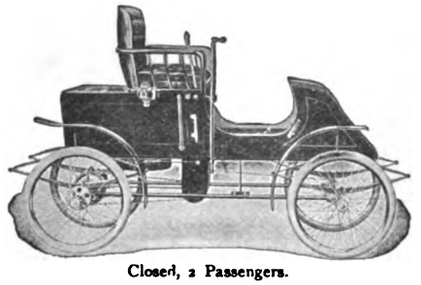
12
Brake Horse Power Gasolene Touring Car

Seats 5 people. Runs 125 miles on one charge. There's not an automobile on the market today equal to this at anything like the price.

"TOLEDO" quality throughout from the smallest screw to the superb finish of the body.

We operate the largest automobile factory in the world. Our models are time tried, successful and reliable.

INTERNATIONAL MOTOR CAR CO., 3065 CENTRAL AVENUE, **Toledo, Ohio**



Closed, 2 Passengers.

You would not travel from

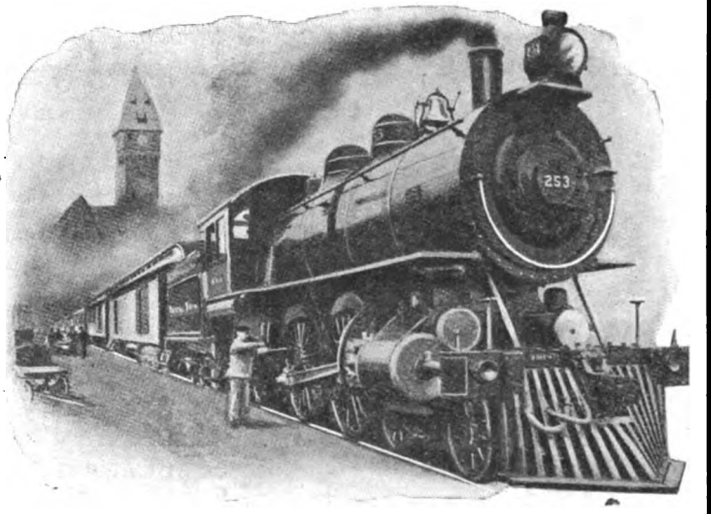
Maine
to
California

in anything but a palatial train, drawn

BY STEAM.

WHY?

Because it is Reliable.



Then why hesitate between the known and unknown power. Steam as applied to the

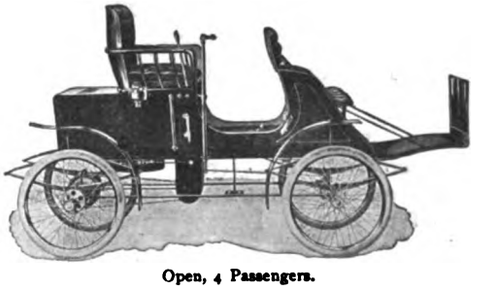
Gold Medal Prescott is Perfection

Flexibility of control. Hill troubles eleminated. Everything controlled from the seat, even the fire—and you can't burn the boiler. Steam, air and water pumps. Foot reverse. Automatic lubrication. Water lift, etc.

Everything perfect. Get its specifications and record.

FACTORY, PASSAIC, N. J.

PRESCOTT AUTO MFG. CO.,
83 Chambers Street, New York, N. Y.



Open, 4 Passengers.

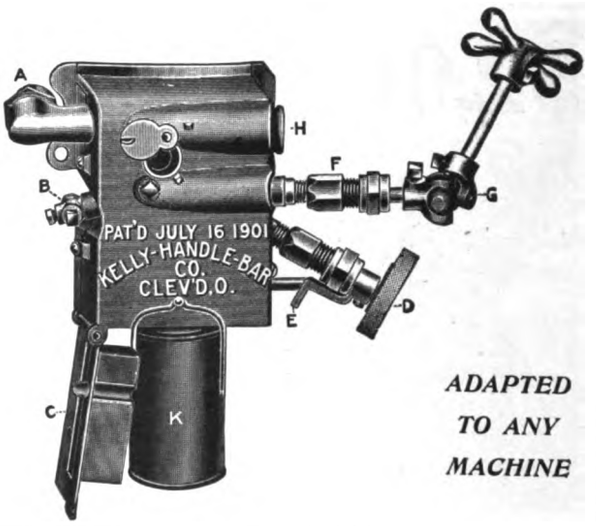
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THE NEW

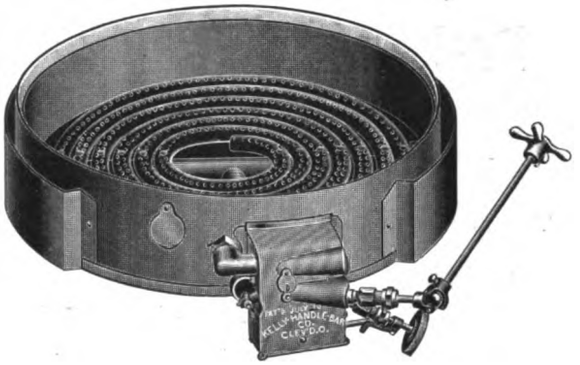
KELLY GENERATOR

for Steam Vehicles is a Trouble Saver.

No Steam Car is complete without one. Does away with drip cups and all annoyances. Perfected in every way and always reliable. Strongly made with all connections outside. Easily adjusted. No flaring or flashing in lighting, even in the strongest wind. Main fire controlled at seat. Compact and neat in appearance and enclosed in aluminum case.



ADAPTED TO ANY MACHINE



The New One-Piece Steel Tubular Burner

with entirely new casing. Has no gauze or holes in the bottom, the air being taken in from the ends. Absolutely eliminates all danger of fire under-lapping. As there are no air-tubes through the continuous stop-tube the burner even if red-hot cannot back fire. One of the most important improvements yet made. Thoroughly tested—as are all our products. Write for circular.

KELLY HANDLE BAR COMPANY, - Cleveland, Ohio.

The Feature of the Accessory Exhibits

AT THE

NEW YORK AUTOMOBILE SHOW

WAS EASILY THE

VEEDER TACHOMETER

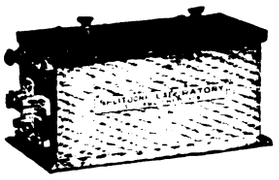
It is placed on the dash directly in front of the driver and indicates at all times, in plain figures, the rate of speed per hour at which you are traveling. IT IS SIMPLE, DURABLE, AND ACCURATE.

Special attaching fixtures are necessary for different makes of automobiles and it requires time to make them. Better send for a descriptive circular and place your order promptly. Numerous orders have already been booked and all will be filled in their turn.

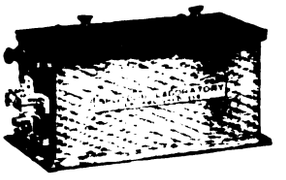
Makers of
Cyclometers, Odometers
Counters, Tachometers
and Fine Castings

THE VEEDER MFG. CO.,
HARTFORD, CONN.

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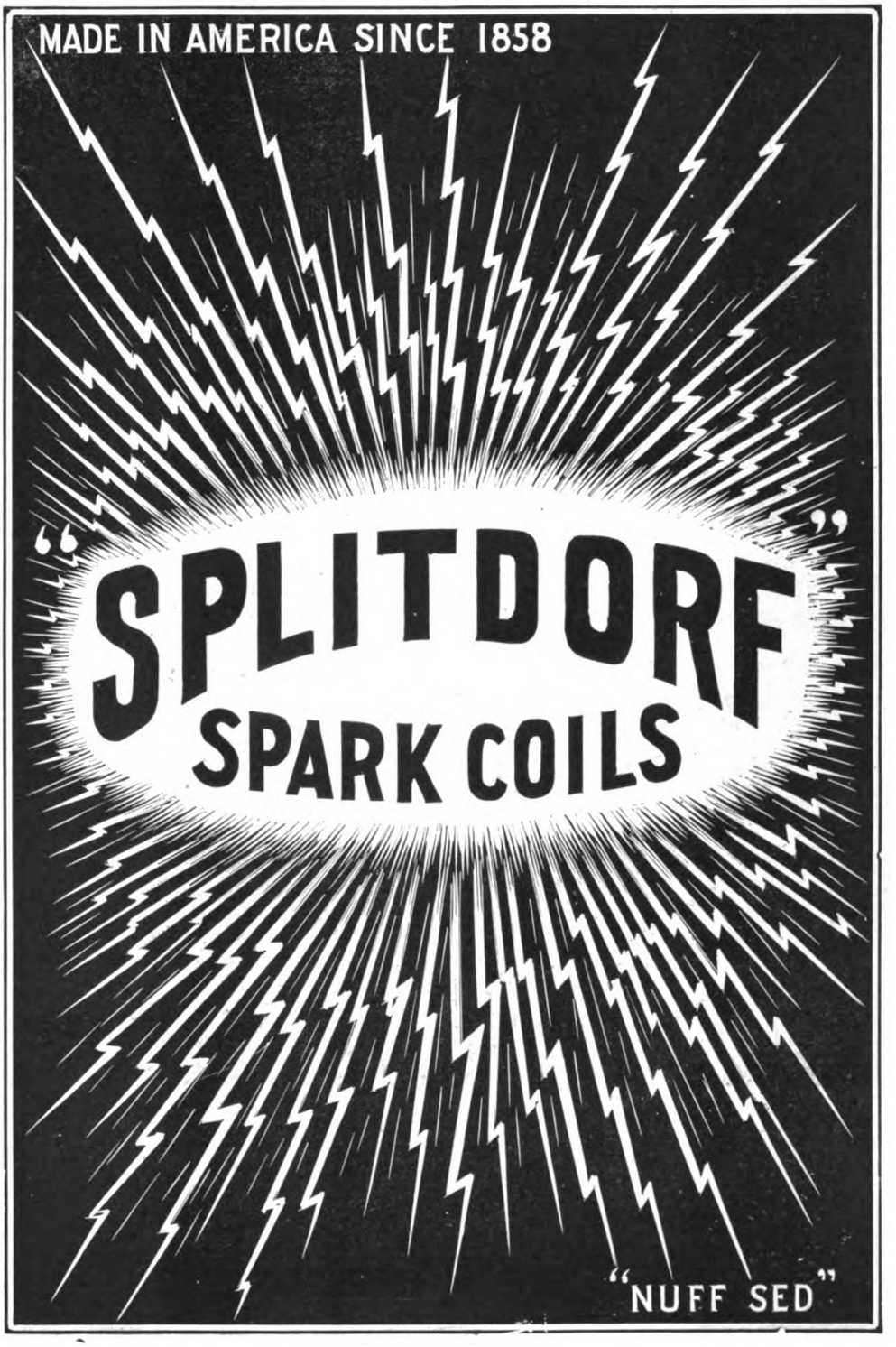










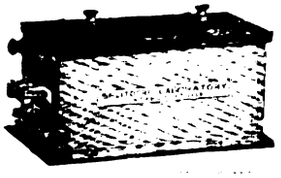


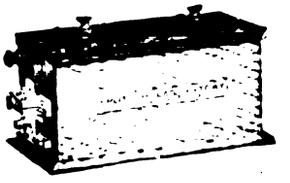












C. F. SPLITDORF

17-25 Vandewater St., NEW YORK

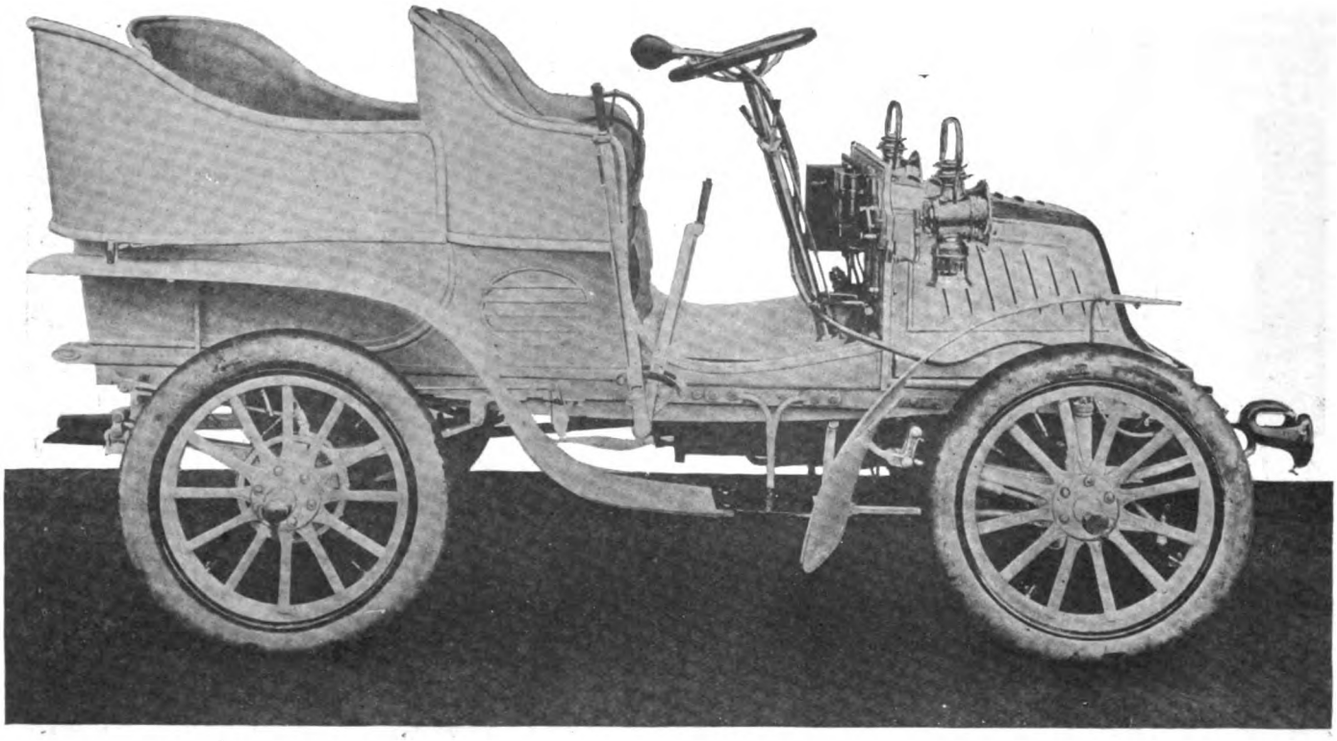
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From Berlin to Vladivostock.

MR. CUDELL is now crossing EUROPE and ASIA from BERLIN to VLADIVOSTOCK on one of these machines.

A HIGH-CLASS GERMAN CAR

The CHAINLESS CUDELL



Noiseless One, Two and Four Cylinder Types. 6 and 8 Horsepower Motorettes, 3 speeds and reverse. 12 and 16 Horsepower. Tonneau, 4 speeds and reverse. Bevel gear, direct drive on high speed, gasolene tank and can made non-explosive by safety device as used in German army, all steel parts made of Krupp steel, four oiling devices. We invite inspection Instruction given to intending purchasers. Compare our prices with others. All duplicate parts in stock. All cars single lever control, double suspension. Trucks and Delivery Vans.

J. C. BRANDES, OFFICE 28 W. 33d St., NEW YORK

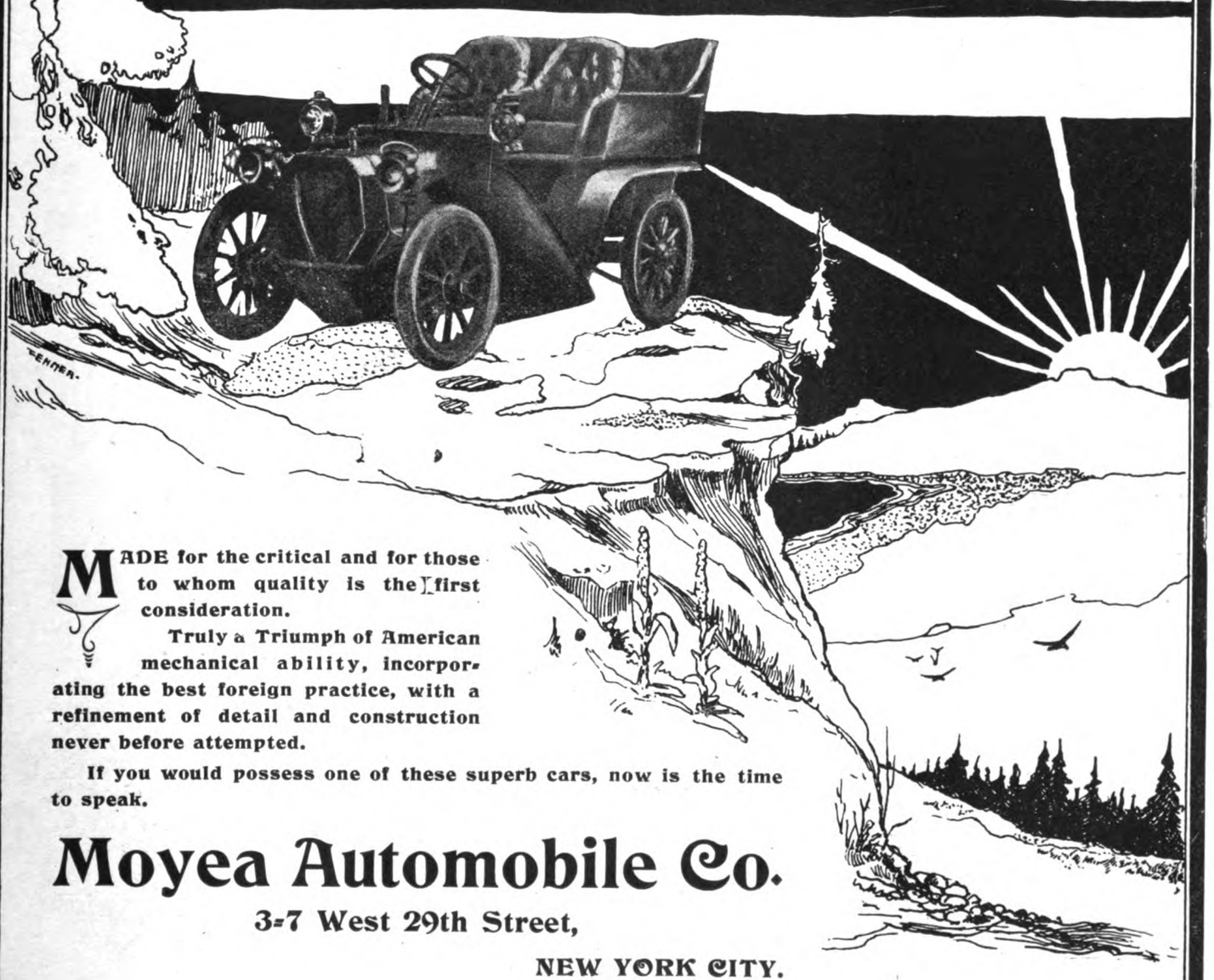
U. S. Agent for CUDELL & Co., Aix-la-Chappelle.

TELEPHONE, 2754 Madison. AGENTS WANTED EVERYWHERE.

Garage: The Motor Vehicle Repair & Storage Co., 121-123 W. 31st Street.

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The MOYEA
FOLLOWS NO STANDARD
BUT SETS ITS OWN AND SETS IT HIGH



MADE for the critical and for those to whom quality is the first consideration.

Truly a Triumph of American mechanical ability, incorporating the best foreign practice, with a refinement of detail and construction never before attempted.

If you would possess one of these superb cars, now is the time to speak.

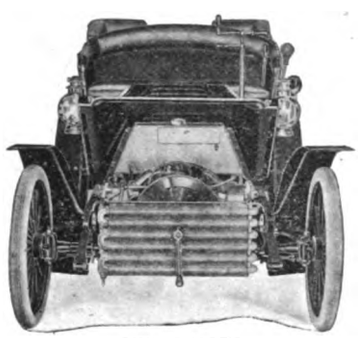
Moyea Automobile Co.

3-7 West 29th Street,

NEW YORK CITY.

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THE AUTOCAR



SHOWING MOTOR.



10 H. P. GASOLENE MOTOR.



REAR VIEW.

Is a Harmonious Whole.

It is not successful because of the excellence of any one feature, but because it is a better combination of carefully worked out details, a symphony of mechanical construction, the most satisfactory automobile production of the year—and the price is equitable. Catalogue and information upon request.

THE AUTOCAR COMPANY, - Ardmore, Pa.

TWO ENTIRELY DIFFERENT PROPOSITIONS:

AN ACTUAL ACTIVE CAPACITY NOW PRODUCING AUTOMOBILES.

A Capacity (largely on paper) to Produce Actual Automobiles.

We belong to the first.

We are making Goods.

We have Goods to deliver.

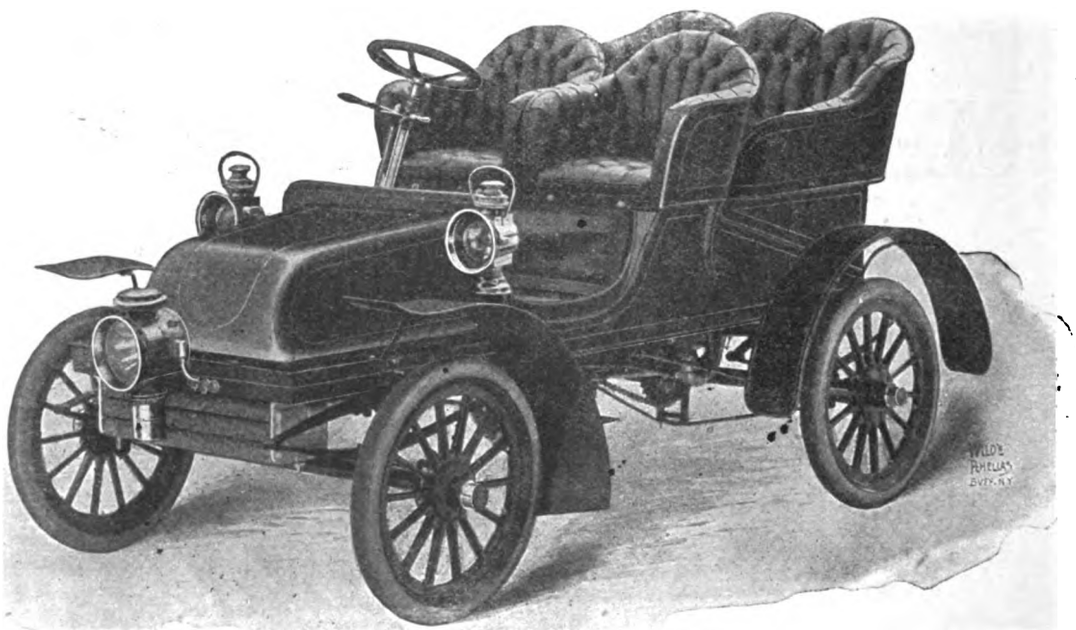
OUR FACTORY IS RUNNING FULL AND HAS BEEN SINCE LAST SUMMER.

CAN YOU MAKE MONEY and hold your customers without filling orders?

Can you afford to run this risk?

You are cordially invited to visit out Factory; such an inspection will convince you that

Our proposition is a safe and profitable one.



Thomas Tonneau, Model 17. Price, $1,250.00.

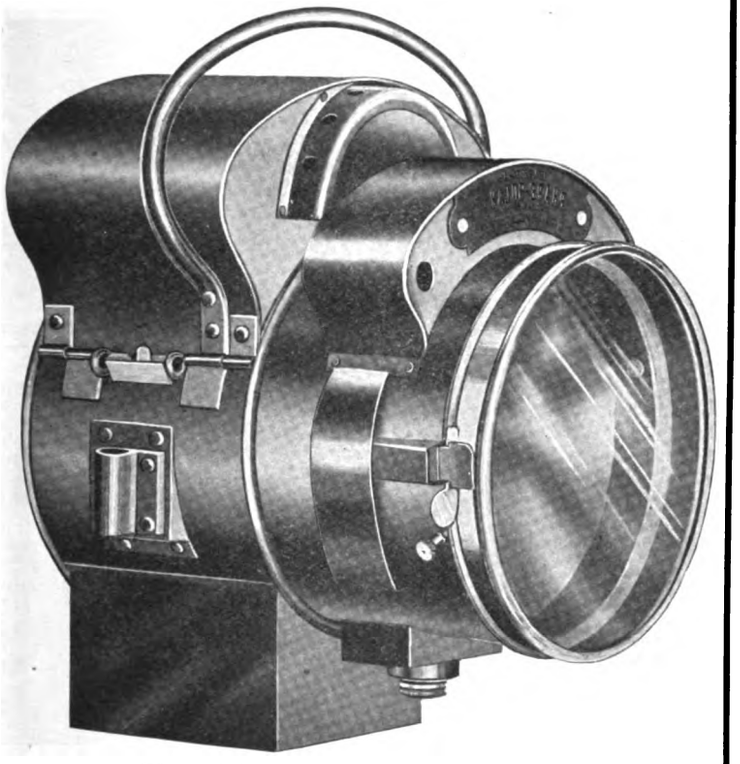
E. R. THOMAS MOTOR COMPANY, - 1200 Niagara Street, Buffalo, New York.

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SOLAR

Motor-Lamps

Show the Way



Phare Solar No. 1. 1160 Candle Power.

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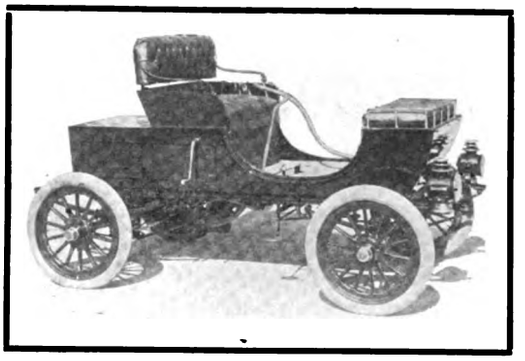
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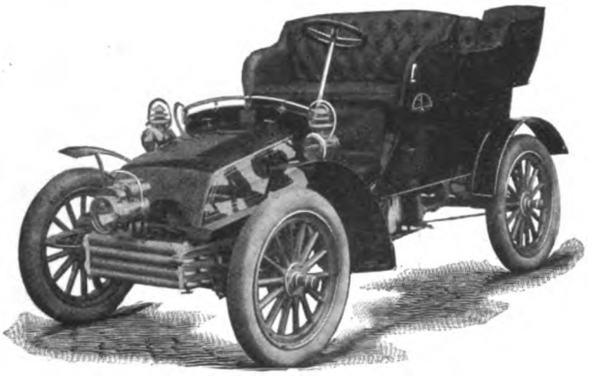
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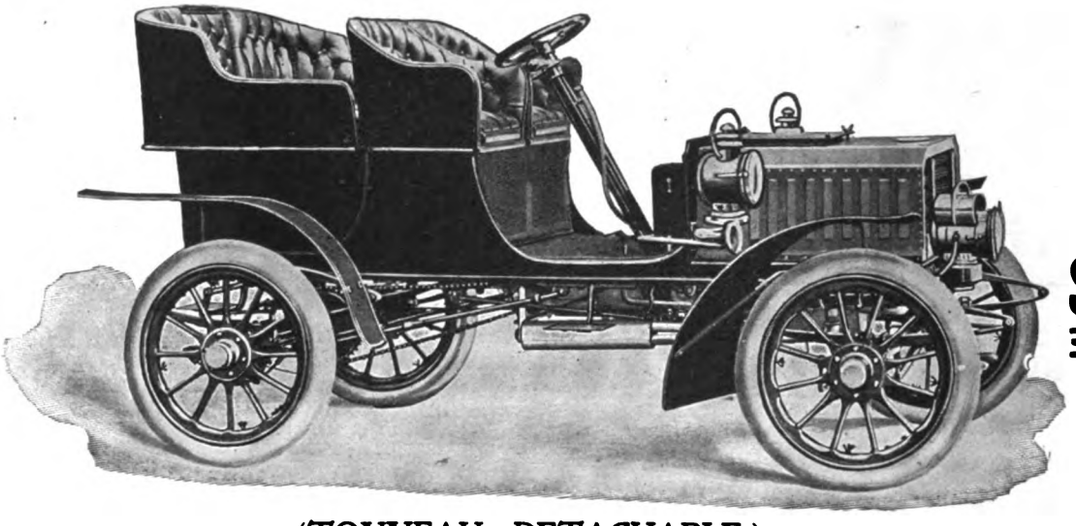
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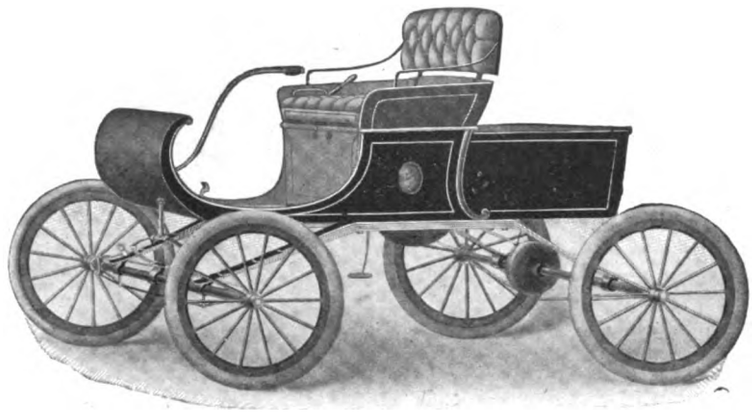
NEW YORK CITY—Pennsylvania Electric Vehicle Co., 152 West 18th St.; BOSTON—Bates Brothers, 145 Columbus Ave.; PHILADELPHIA—Pennsylvania Electric Vehicle Co., 250-256 North Broad St; PITTSBURG—L. G. Martin Co., 528-530 Grant St.; MINNEAPOLIS—Northern Cycle Supply Co., 116 South Sixth St.; ROCHESTER—F. A. Mabbett, 66 East Ave.; BINGHAMTON—Binghamton Automobile Station, 259 Water St.; DETROIT—W. H. Weber, 288 Woodward Ave.; DENVER—Felker Cycle Co.

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The motor is the one great essential of the Automobile, and 23 years of gasolene motor building enables us to put into the Oldsmobile all the practical knowledge possible to get from EXPERIENCE.

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Oldsmobile Co., Cleveland, Ohio.
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Olds Gasoline Engine Works, Omaha, Neb.
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Sutcliffe & Co., Louisville, Ky.
Brown-Thompson & Co., Hartford, Conn.
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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, February 19, 1903. No. 21

BUYS GASOMOBILE PLANT

Pan-American Will Manufacture in Marion, N. J. but Will go Slowly, Says Scarritt.

The Pan-American Motor Co., has purchased the remainder of the property formerly belonging to the Automobile Co. of America, located at Marion, N. J. It consisted of the ground and factory buildings, and the price is understood to have been $100,000. This is a sequel to the purchase a few weeks ago of the machinery, stock, etc., of the defunct Marion concern.

As a result of this purchase the Pan-American company is gradually closing out work at the Mamaroneck plant and transferring its effects there to Marion. It is the intention to concentrate at the latter place, and for the present, at least, manufacture the Panam car there.

To a Motor World man President W. E. Scarritt of the Pan-American company said on Tuesday when asked for a confirmation of the report:

"Yes, we have acquired the property. You see, it is this way: The stockholders of the two companies are closely connected in a business way. It seemed advantageous to make this deal, and it has gone through, although with a proviso. It awaits confirmation by Mr. Bostwick, who is now in the South on his yacht and will not return until April."

"Has the title to the property passed to the Pan-American company?" he was asked.

"Yes, title has passed; but it must be confirmed by Mr. Bostwick," was the reply.

"Do you propose to manufacture the Panam at Marion?" Mr. Scarritt was next asked.

"Such is our intention. We are preparing to close down at Mamaroneck and to devote our energies to the work at Marion. In fact, we have no intention of securing any other factory—at present."

In reply to the inquiry as to the extent of the business the company expected to do this season Mr. Scarritt said:

"You have probably noticed that we are not advertising. Neither are we looking for business. We could sell many times the number of cars we shall turn out this year without effort of any kind. What we are trying to do is to build one car perfect—as near perfect as is humanly possible. That done we shall make ready for next year."

Phelps is Reorganized.

Announcement is made that the newly organized Phelps Motor Vehicle Co. has acquired the property, patents, etc., of the Phelps Motor Co., of Stoneham and Boston, Mass. The manufacture of vehicles under the Phelps patents will be continued at Stoneham, as heretofore. The officers are as follows: President, Elliot C. Lee, of Brookline, Mass.; treasurer, A. T. Harris, of No. 28 State street, Boston; general manager, L. J. Phelps, of Melrose Highlands, Mass. The treasurer's office is located temporarily at No. 28 State street, Boston.

Lewis's Death Causes Changes.

Owing to the death of P. C. Lewis, of the Automobile Headquarters, Boston, Mass., formal notice of the dissolution of the partnership existing under that name has been given. The firm's affairs will be settled by Orpha O. Lewis, while Ralph C. Lewis will conduct the business under the same name and at the same place, No. 66 Stanhope street. The two partners of P. C. Lewis, George G. Reed and Arthur P. Underhill, will open a store and repair shop at No. 41 Stanhope street.

Auctioned off Remington Remains.

Pending the efforts to reorganize the Remington Automobile & Motor Co., the property of that concern was sold at auction at Utica, N. Y., last week. John B. Wild bid it in on behalf of the company. Two lots were put up, and were knocked down for $7,500 and $1,200, respectively.

Close Will Make Cars.

The Close Cycle Co., Olean, N. Y., will manufacture automobiles also. They are at work on a car that will be ready for the market in a short time.

WILL ABSORB DURYEA

His Patents Acquired and New Company Now Negotiating for his two Factories.

An undertaking of large scope came to the surface last week when a temporary organization was affected of the United States Rapid Vehicle Co., of this city. Temporary quarters were secured at Nos. 7 and 9 Warren street.

The concern has for its objects the acquisition of the patents of Charles A. Duryea, and the manufacture—ultimately on a very large scale—of cars built in accordance with them. One hundred of these cars, to be equipped with the Duryea three cylinder motor and transmission gear, but in other respects to differ materially from the well known Duryea designs, are already under way. It is expected that they will be ready for late spring delivery. These cars will carry two or four passengers, being designed with a disappearing front seat, which, when closed, will have the appearance of a bonnet. The price will be $1,200.

The present company was formed largely to prosecute the work on these cars and to make a start. The capital is $100,000, and the officers are Francis D. Carley, president; Charles E. Duryea, vice-president, and Henry Van Arsdale, secretary and general manager.

It is a part of the project, however, to acquire the Duryea companies at Reading, Pa., and Waterloo, Iowa, and to float a company with an immense capital by offering the stock to the investing public. Francis D. Carley, who will be remembered in connection with former automobile stock flotations, is back of this end of the plan. It is understood that while public subscriptions are earnestly desired, the floating of the company is not dependent upon them.

The company's temporary offices are in charge of Secretary Henry Van Arsdale. To a Motor World man who saw him on Wednesday he said:

"Everything that has been done is of a tentative nature. We do not know yet what the name of the company will be. Until Mr. Duryea returns from Chicago nothing in this connection will be known. I have simply been installed here with power and funds to get the work started on the first one hundred cars."

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START MAY BE VEXATIOUS

So Many Entries in Paris-Madrid Race That a new Problem Results—Day of Rest Proposed.

French Bureau Motor World.
2 Rue d'Abbeville.

Paris, Feb. 6.—The entries for the Paris-Madrid motor car race, which is to take place on May 24, are coming in steadily, and have already nearly touched a hundred, although the actual course which the competitors will follow has not been definitely decided on. There will undoubtedly be much larger numbers of starters than in any road race hitherto organized, and the question of the length of time occupied by the starting will soon become a very serious one. The two minutes which are allowed between each competitor will have to be reduced to one minute or even less, for in th Paris-Vienna race from three to four hours were occupied with the start, and in the Paris-Madrid there are likely to be upwards of two hundred starters, in which case it will require from six to seven hours to start them all, and the last starters being under the serious disadvantage of only being able under the best conditions to reach the end of the stage by nightfall. It will also necessitate the controls being kept open very much later and strict attention paid to the times of the late arrivals, for it may be quite possible for a winner to arrive at sundown, when generally the controls become somewhat disorganized.

As far as the Spanish frontier the route has now been definitely fixed, and it is on the whole very good. From Bordeaux the route will pass through Castets, Bayonne and Saint Jean de Ludy, reaching the frontier at Behobil. Here there is the bridge of Bidassoa and there is only a hundred yards distance between the French and the Spanish custom houses, so that the formalities can be carried out most readily without any delay.

There is a scheme before the A. C. F. racing committee for allowing a day's rest in Bordeaux, and it is quite likely that this plan will be adopted, for at the speeds at which motor cars can now travel the fatigue to the driver, who has to have his attention absolutely directed to the road, is very severe. A day's rest in Bordeaux will give the drivers a rest and enable the public to see the cars, which, of course, will be safely quartered so that they may not be tampered with.

After Bordeaux, and for the first time in the annals of road racing there is a stretch of 108 miles of road without any agglomerations, and, therefore, any restrictions. The highest speeds can be indulged in and there are sure to be some remarkable records made. Mr. Tampier, the popular timekeeper of the A. C. F., who has gone over the roads from Paris to the frontier, and made the selection which the racing committee has adopted, reports that all along the road there is the greatest enthusiasm with regard to the race, the authorities of the different towns and villages vieing with each other to facilitate matters and to have the competitors pass through their localities.

Revised Scoring for Reliability Runs.

Having drawn up a formula, the sub-committee of the Automobile Club of Great Britain recommends that the marking for the 1903 trials shall be as follows:

Trials commended that: (1) Marks shall be given for "accuracy of advertised horsepower," which is to be taken from the best performance of the car on any one hill; (2) three marks a mile are to be awarded for each day's run as reliability marks, deducting one mark a minute for stoppages, as before; 1,500 marks allotted for "cleaning, adjustments and replenishing," deducting one mark a minute, as usual, to apply to Crystal Palace deductions only; (3) marks—3,000 for reliability, 1,500 for cleaning, etc.; 1,500 for hill climbing, 500 for condition, 500 for speed, 250 for brakes, 250 for steering, 250 for silencer, 250 for vibration, 250 for dust, 250 for restarting on hill, 250 for vapor or smoke, 250 for appearance, 250 for accuracy of horsepower, and 250 for fuel consumption; (4) fuel consumption marks to be—full marks for thirty miles per gallon for car weighing one ton laden; marks for ten miles per gallon for car weighing one ton laden. Full marks for forty-five miles per gallon for car weighing half a ton laden: marks for fifteen miles per gallon for car weighing half a ton laden. (5) For price deduct from the grand total one mark for every £1 sterling above the minimum of the class at which the car is entered. (6) Hill climbing formula:

$$\frac{S \times (P + 6)}{(£ + 2{,}000)} \times \frac{A \times C}{N}$$

S = speed in miles per hour on hills; P = number of passengers carried; £ = price in pounds; N = the number of hills on which trials are held; A = the average gradient in percentage; C is a constant (?17). (7) Formula for speed:—

$$\frac{S \times (P + 6)}{(£ + 2{,}000)} \times 3{,}000$$

Looks Like Ireland.

Irish stock is rising. There is at last a real prospect that the Bennett Cup race will be run in the Emerald Isle. Cable dispatches from London, under date of Tuesday, state that the Hon. J. S. Montagu, who drew up the bill which will be submitted to Parliament authorizing the race, was informed by the Premier and the Chief Secretary for Ireland that the government is heartily in favor of it, and should any opposition be offered, which is not anticipated, the government will use its influence to overcome it.

That this practically assures the holding of the contest in Ireland is the view taken of the matter in Great Britain.

CONTEST WILL GO ON

Automobile Club Ignores Manufacturers' Queer Objections and Makes First Formal Move.

It became apparent on Monday that the resolution adopted by the National Association of Automobile Manufacturers, declaring opposition to the holding of a contest for business vehicles, had not caused any commotion in the Automobile Club of America, let alone interfering with its plans. The contest committee of the club proceeded as calmly to go for vard with its arrangements as if there was no N. A. A. M. in existence. Only there was a subtle swerving in the direction in which the plans were being laid that was very significant.

Officially the club has taken no action on the resolution adopted by the executive committee of the N. A. A. M. and sent to the club, beyond acknowledging the receipt of the communication containing the resolution and the statement that it had been referred to the board of governors. The governors have not met since then, and probably will not do so until next week. Of course it has been known to the contest committee, however, all about the resolution and what the sentiment of the governors is concerning it, and undoubtedly the action of the contest committee in drafting a letter and sending it out to business concerns in New York City was "inspired" and is a foreshadowing of what the action of the governors will be with regard to the resolution.

It was said by a member of the club, who was quoted in The Motor World last week, that there was no reason why the club should not go ahead with its arrangements and let the manufacturers enter or stay out, as they liked. It would seem that this sentiment had been entertained by the contest committee when it drafted a letter which was sent to seventy-five business firms in New York, for the communication plainly manifests a decision to turn the back upon the would-be dictators in the N. A. A. M. and look to those who own and operate motor trucks and wagons for the filling of the entry lists. The letter sent out lays a peculiar emphasis on the fact that the contest committee is proceeding under instructions from the board of governors. It reads as follows:

"The Automobile Club of America, as you perhaps know, is an organization, one of the purposes of which is to encourage the introduction and use of all types of self-propelled vehicles. To this end the club has from time to time held contests for automobiles to demonstrate their reliability as a pleasure vehicle.

"The board of governors of the club have now instructed their contest committee to hold a contest in the spring, probably in May, for commercial vehicles of all types, including heavy trucks and delivery wagons.

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as well as light delivery wagons, propelled by gasolene, steam or electricity.

"It is the intention of the club to determine by this contest whether the time has arrived when it can be satisfactorily demonstrated that self-propelled vehicles can be used in commerce at less cost and to greater advantage than the present horse-drawn vehicles.

"We believe that this question cannot fail to interest you, and the contest committee is anxious to secure the views of gentlemen who are in charge of the deliveries for large commercial institutions in the city, with a view of making the contest cover the ground most desired by the companies delivering goods in New York and vicinity.

"If your company would have the gentlemen in charge of your delivery department meet this committee at the clubhouse, 753 Fifth avenue, New York, on Thursday, February 19, at 4 o'clock in the afternoon, and talk over the matter, we think it would be of mutual interest.

"Will you kindly advise us whether you will send a representative, and oblige, yours truly, THE CONTEST COMMITTEE.

P. S.—We wish to learn what are the general requirements for a long as well as a short haul, and for both light and heavy vehicles."

The contest committee of the club consists of John A. Hill, chairman; Emerson Brooks and John R. Conklin.

Clement Invades England.

An industrial combination fraught with momentous consequences for the British automobile trade has been formed in England. The prime movers are M. Clement, the great French maker; the Earl of Shrewsbury, D. M. Weigel and Charles Garrard.

M. Clement may be said to be the head of the automobile industry in France, and is largely interested in the firm of Panhard & Levassor, Clement-Gladiator and in the Clement Cycle and Light Carriage Co., in this country. The Earl of Shrewsbury is one of the shrewdest and most enterprising business men in London; Mr. Weigel, who has been associated with the Earl of Shrewsbury for some time, is a man of great ability and energy, and has made himself thoroughly master of all that pertains to motoring; while Mr. Charles Garrard has already given proof of his engineering abilities in connection with his own business in Birmingham. Gigantic works are being laid down, and the new combination will undoubtedly occupy an exceedingly important position in the English trade.

First Run Called Off.

On Tuesday, when all the night before the north wind had blown and it was known that it "had snown," the touring committee of the Automobile Club of America decided to call off the run to Philadelphia and back, which had been announced for this coming Saturday, Sunday and Monday. It was concluded that not so many as a corporal's guard could be induced to start

NAPOLEONIC CLEMENT

Engages Norris Mason as American Manager and Outlines Far-Reaching Plans.

A deal of magnitude that promises to completely change the condition of affairs in the United States with regard to several of the best known foreign machines has been consummated, and its workings will begin to be seen in April. A. Clement, who without question is the man with the biggest and the most extensive automobile interests in the world, concluded while he was here to launch forth in America in a way that is apt to affect seriously the concerns now dealing in three well known French machines.

As is known to some persons, M. Clement has a one-quarter interest in the Panhard factory, a one-third interest in the Mors establishment, and a one-third interest in the Renault concern, besides owning the Clement automobile factory at Levallois, the Gladiator and Clement bicycle plants, in Paris, having an interest in the manufacture of Michelin tires and being the senior partner in the famous body building firm of Clement & Rothschild. With his connection with the Mors, Panhard and Renault factories, M. Clement can obtain machines direct from them, and now has options on deliveries from them. As is well known in the trade, the French machines now received here travel first through the hands of several agents before they reach the American dealer. M. Clement being able to deal direct with the factories, as other dealers here are not, calculates that he can sell Panhards, Mors, Renault and Clement machines less the amount of several commissions. This he has decided to do.

While here M. Clement engaged Mr. Norris Mason to be the manager of all his interests in America, including his factory at Bridgeport, Conn., where motor bicycles are now being made and where he contemplates building Clement motor cars for 1904. Mr. Mason was until recently the chief room clerk at the Waldorf-Astoria. He is a young man from St. Louis, only twenty-six years of age, and yet a pushing, capable business man, with manners well calculated to win success. He is not strange to the automobile business, as might be inferred from the position he held at the Waldorf, but is thoroughly familiar with motor cars and well acquainted with the people who deal in them. During the three years he was at the Waldorf Mr. Mason established an enviable acquaintance with the representatives of foreign factories who came to this country, and also with the wealthy men in this country who are the buyers of expensive machines. In this way he became acquainted with M. Clement two years ago. He also formed the acquaintance of MM. Duplan, Lucas, Charley and other French automobile men. He became best acquainted with M. Clement and his partner, M. Lucas, through having tried to put through a deal to have Panhards manufactured here in the old Gasmobile factory at Marion, N. J. He had J. H. Flagler, Sidney Dillon Ripley, V. Everit Macy and others interested here and ready to finance the scheme, but it fell through because the Panhard company wanted too much cash, too much stock as a gift and 20 per cent on the machines besides.

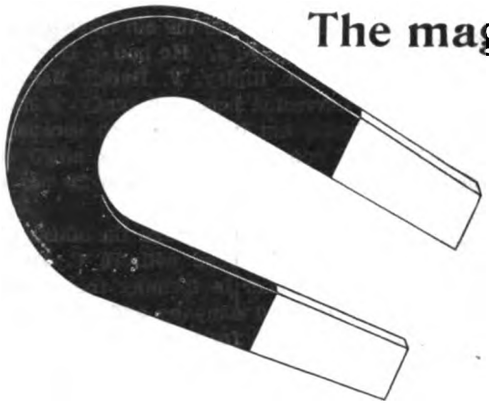
Later Mr. Mason, through the offices of M. Ernest Cuenod, joined with H. C. Tuxbury and Alex Fischer in forming the American Georges Richard company and obtaining the exclusive control for those machines in this country. With his partners, Mr. Mason has been selling the Georges Richard machines here for a year past, and it was through him that Barry & Hayes, of No. 35 East Fifty-eighth street, obtained the New York agency for them.

A Motor World man had a frank, interesting talk with Mr. Mason on Tuesday night just before he left New York for a visit to the Clement factory at Hartford. He left the Waldorf-Astoria some time ago, and has entered actively upon his duties as the American representative of the great Clement. From Hartford he goes to Chicago, and on next Tuesday he sails for Europe on the Crown Prince. He said:

"We have rented a place at No. 12 East Twenty-seventh street, which will be opened as the New York headquarters as soon as I get back from France. The store in Twenty-seventh street is 30 by 45 feet, and we will have two floors. The interior will be entirely remodelled, and work has begun on it already. When I return I will bring with me a couple of the latest Mors machines and one or two Renaults. Toward the end of April the younger brother of Lamberjack, the chauffeur, who was here during the show and who is a promising racing man himself, will come over with two new specially built Clement racing cars of 60 horsepower each and race them here, challenging every prominent racing man in this country.

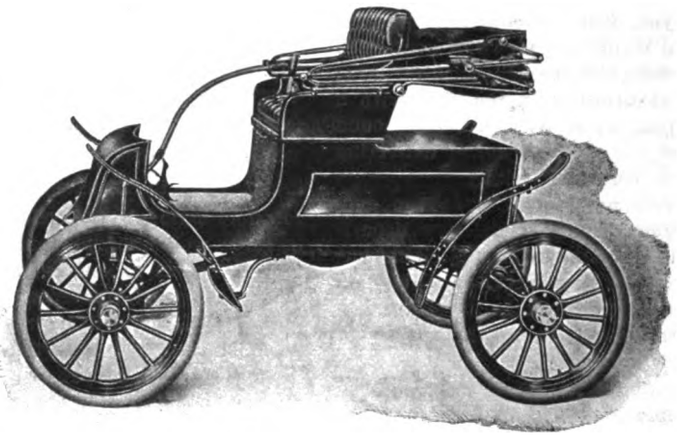
"W. G. Allen, the head of the Hartford factory, is going to France with me, and I will spend a month in the Clement factory at Levallois studying every detail in the construction of the Clement car. About the manufacture of Clement cars here, that has been proposed, but it is not settled. The new factory in London, in which Lord Shrewsbury is to be a partner with Mr. Clement, is to be opened about April 1, and I am going to stop there on my way back. This new factory will take so much of the time of M. Clement that M. Lucas, his partner, is opposed to the idea of beginning to make cars here, so we may for a while yet do only a business in imported cars. M. Clement is a most particular man about the thoroughness of work and the finish of everything. He must inspect every new car himself. He would have to see any car turned out in America, and when he was here he said that if the cars built here were not in every respect equal to the French product they would be broken up and thrown in the scrap heap and a new start made. That is the sort of a man he is. He is enterprising, and cares nothing for the expense if only he can get everything just so. He has spent $4,000,000 in the last two years for new machinery. He spent $250,000 while he was here this last time with Brown, Sharpe & Co. for machinery,

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The Northern Runabout



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THE MOTOR WORLD
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And Kindred Interests

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NEW YORK, FEBRUARY 19, 1903.

Action of the Right Sort.

Well done, Automobile Club of America!

The issue between the manufacturer with selfish ends in view and disinterested promoters of competitions, having in aim solely the benefit of the industry and the sport at large, was sure to come. It came when the manufacturers endeavored to prevent the holding of the contest for business vehicles which was projected by the club. It was made quite squarely by the executive committee of the National Association of Automobile Manufacturers, and it is to be as squarely met by the club. This is made plain by the letter of the contest committee which was sent out last Monday to seventy-five business firms in New York city, and a copy of which is printed on another page. The board of governors have taken no action in the matter as yet, but an indication of what their course will be is sufficiently furnished by what the contest committee have done.

The letter sent out may be considered al most as a definite snub for the N. A. A. M., and the sympathies of those familiar with the history of events in connection with the proposed contest will be wholly with the club. Before making any definite move in the matter, the contest committee invited all the manufacturers to meet with them and discuss the project. Nothing could have been more considerate and polite than this course. At that meeting was the time for manufacturers to make their protests. That would have been the gentlemanly course. Instead of there being any objections raised there was a general approval of the project by the manufacturers at their meeting with the contest committee. The strange and suspicious circumstance is that several of the same concerns represented at the first meeting, where approval of the contest was given, were present also at the meeting of the executive committee of the N. A. A. M., when the resolution opposing such a contest was adopted. This made it look as if some one or ones with an axe to grind could manipulate the N. A. A. M. On the whole it is not surprising that the club should consider the sending of the resolution to it as an impertinence. It would have been better if the N. A. A. M. had been satisfied with letting the resolution go on record as one of the minutes of the organization, and refrained from sending it to the club, as if it were something which the club should heed.

The contest committee has acted wisely and with commendable firmness. It is to be hoped that the policy of the club will be always as clearly defined as it has been in this matter.

It is not the general policy of the Motor World to arrogate credit to itself. Probably the committee would have recognized of itself the fact that the users of motor wagons and trucks are the ones from whom entries must be sought, which was pointed out by the Motor World some time ago, at the same time that it was explained why a part of the course should be through city streets, but it is gratifying to note that what was suggested agrees with what is being done. The manufacturers of power trucks and wagons build to order, and few of them have any spare cars to enter in a contest. Cars that have seen service will, moreover, give a better account of themselves than new ones.

It will be of decided benefit for the firms who use motor delivery wagons and trucks to have it advertised by a public contest that they are progressive enough to do so, and of greater benefit to the successful competitors for it to be known that they have the most efficient cars of their type. For these reasons the business firms of the city should comply with the request of the club and should enter freely into the contest and the spirit in which it is given. In order that they may enter the lists and compete the contest should be held on a holiday, when the wagons will not be required for delivering goods, or perhaps a Saturday afternoon druing the early closing period after the first of June might do. It is probable that the new comers in the manufacturing field will be only too glad to enter, and that certain manufacturers will swell the lists. It does not matter whether the "Men-Afraid-of Rivals" do or do not.

It is time to bring the motor truck and wagon from the background.

Let the contest go on.

Ceylon vs. American Civilization.

To hold up as an example of equal and exact justice the ruling of a court in more or less benighted Ceylon is reaching far out, but the language of the Colombo magistrate is so pertinent and so like real justice that it would be well were it possible to brand the words on the brains of all those in highly civilized America who have to do with the making and the application of the law.

"Horsed carriages," said the Ceylon sage, "have no greater right to the use of the public roads than have motor cars, and it is not inconceivable that at some distant day they will be as extinct as are Sedan chairs now. I see no reason why the defendant in this case should be mulcted in damages than why the first man who used an umbrella in London should have been assaulted by the mob as he was. The defendant was driving a legitimate vehicle in a legitimate way, and I cannot therefore hold him legally responsible for accident due to the timidity of the horse."

In America the man with the automobile is like the man with the umbrella—it is the fashion to assault him, and the mob is composed not of rowdies, but of "statesmen" in legislatures.

Merit That is not Appreciated.

For a vehicle that is peculiarly fitted to cope with snow and ice, the automobile has been singularly unfortunate in not having the fact brought home to the public. Fair weather vehicles most of them are. Used only for pleasure, when the skies are cloudless and the roads hard and dry, their own-

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ers seem to lose sight of the fact that they are fit for all weathers. Supplied with tops or closed bodies, and with the engine and other parts properly protected, they are proof against the wintriest brand of weather found anywhere. When of the gasolene variety cold only makes the motor more efficient. Rain and mud, sleet, snow and ice, these interfere but little with their progress—certainly to nothing like the extent that similar conditions affect the equine drawn type. The fiting up of a coil or two of pipe furnishes ample warmth, and safely esconced behind glass walls, with steering and other levers within easy reach, the autoist is able to laugh at Old Boreas and his storm bearing companions.

On streets of sleet, as on snow encumbered ones, the motor vehicle rarely falters. The contrast between it and the horse-drawn kind, with the patient, pathetic brutes slipping and sliding, held to their work only by tight rein and mercilessly wielded lash, is eye opening. But it fails to accomplish all that it could, owing to the limited number of all-weather cars. Most of them are withdrawn at the first hint of inclemency. Were they used more, come rain, come shine, it would undoubtedly hasten the coming of the day when for all utilitarian purposes the horse will pass into "innocuous desuetude."

The Tilting Steering Wheel.

Frequently the simplicity of a device is apparent only after it has been invented. As it was with the egg of Columbus, it seems very easy, and everybody wonders why it was not thought of long before.

The tilting steering lever is a case in point. A year ago it was new, being seen on but one or two cars. It was even regarded with suspicion, many people believing that it would give trouble—was of the "freak" order, in fact. Where it was not adversely criticised it was viewed with indifference, and no feature seemed less likely to met with general approval.

There is no manner of doubt, however, that it has "caught on," and for a very good reason. It fills a want, and its popularity seems assured.

It is obvious that the operator of a car should be able to easily reach the steering wheel when settled firmly back in his seat. To do this would interfere with his ingress and egress, particularly if he be at all portly. In arranging wraps, when these are used, the wheel is also in the way. The greater slant given to steering columns further complicates matters, and altogether a considerable amount of inconvenience is caused. That it can be put up with is incontrovertable, for a very considerable majority of cars are still built with immovable columns and wheels, but no operator who has used a tilting wheel will go back to the old kind unless there is something unmechanical about the particular device used.

Trap the Motorphobes.

It was humanly natural that the automobilists who have been so persistently persecuted under the Cocks law by the Scudder brand of motorphobes on Long Island would retaliate some day, and it is calculated to cause a spasm of unholy glee in the bosoms of all automobilists to know that they have done so and have caught a number of horsemen at Seacliff "dead to rights" under the same Cocks law.

It is not to be recommended that automobilists should adopt the undignified, unmanly and contemptible tactics of hiding in the woods and lying in wait for unsuspecting horsemen and others who travel faster than eight miles an hour on the road, but turn about is fair play, and it would be a truly wholesome thing for some concerted action to be taken by automobilists toward an equitable enforcement of the law. There are probably a dozen horsemen and bicyclists who violate the eight miles an hour speed for every automobilists who does so. There would be plenty of material for the making of examples if the automobilists would for a brief time undertake to fight the cranks with their own weapons. To cause the arrest of a few farmers, pleasure drivers and cyclists would bring out strongly the absurdity of the eight mile restriction, and it might possibly lead the motorphobes to pause in their invidious selection of automobilists for victims.

For Universal Lights.

It would probably be a waste of effort for autoists to object to carrying lamps. They would have to do so anyway. As a matter of fact, horse drawn vehicles are the only ones that are admitted to have an inalienable right to perambulate the public highways without lights. All other wheeled vehicles, to say nothing of every conceivable manner of craft that ploughs the water, must be provided with lamps.

It is just as well, therefore, that autoists are complaiscent. They admit the desirability, if not the necessity, of lights, and aid, instead of atempting to hinder, their carriage. Universal lights would be a more logical cry than lights for automobiles, and the day will undoubtedly come when they will be required. Then people will wonder why such a natural step was not taken long before, and the users of horse drawn vehicles will inquire why they were ever so stupid as to oppose a measure of such undoubted wisdom.

Come to think of it, we don't hear as much as we used to of the chronic habit of the automobile to break down 'steen miles from anywhere, and leave its hapless passengers in the lurch—or in the ditch, do we? The wits still turn their atention to the self-propelled car, but it is its swiftness, power, awe-inspiring qualities that appeal to them most. Being indicative of progress, we can afford to regard the change with equanimity.

The injunction to drive on the direct gear is getting to be more and more the slogan of foreign and other makers of big cars. It was inevitable that sooner or later energetic efforts should be made to avoid the enormous wastage that takes place with the usual systems of transmission. A big step forward has been made by the change referred to.

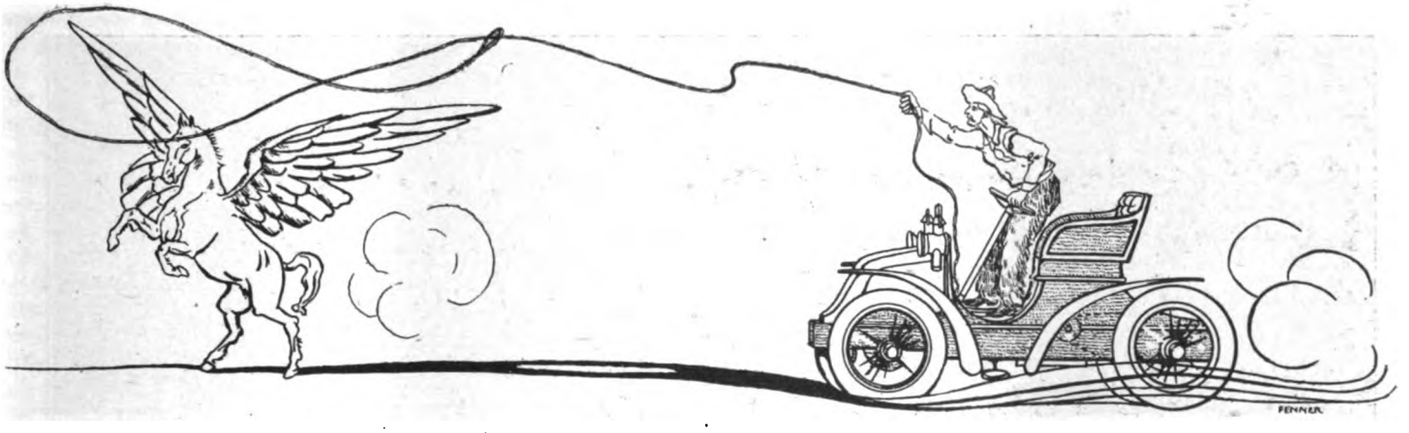
As a counter balance to the man who wanted to exchange an automobile for a graveyard lot, there is his fellow who advertises that he will trade a merry-go-round for a motor car. In face of this who can doubt the popularity of the mechanically propelled vehicle?

In his eagerness to have the Bennett Cup race run in France M. Georges Prade challenged the right of the British club to hold it in Ireland on the ground that Edge, the holder of the trophy, is an Englishman! In reply it is pointed out that Edge was born in Australia!

The annual game of tag, with the autoist as "it," has been started, and before the spring comes it is long odds that no state that has automobiles within its borders will be without its bill designed to legislate them out of use.

A Camden, N. J., paper pillories opponents of the Scovell automobile bill and a measure forbidding live pigeon shooting, holding that they are birds of a feather. Of a verity, this is the most unkindest cut of all.

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SPLENDID AS A SPECTACLE; DOUBTFUL AS A MART

Chicago Show Falls Short of Anticipations, Buyers Being Few and Unfavorable Weather Keeping Down Attendance—Several New Cars in Evidence, also Several Out-Edisoning Batteries.

Chicago, Feb. 16.--It may be too early to pass judgment on the show which opened in the Coliseum here on Saturday night, but it is fair to say that unless it improves in several respects before the doors close next Saturday it will fall short of what fancy painted.

The incompleteness which marked previous shows marks this one; there are many vacant spaces, and delays in transit scarcely account for all of the vacancies, as several of them are chargeable to local and nearby space holders. The indifferent attendance both of the public and of dealers is also again a matter of remark. It may be that as the week advances, as was the case last year, the show will improve in these regards, and naturally the wish is father to the thought; but, writing this Monday night, there is small cause for enthusiasm or congratulation. Nothing is to be gained by disguising the unpleasant truth.

As a spectacle the show is far ahead of any ever held here, and compares favorably with the New York affair; in one respect, indeed, it is more impressive. The exhibits are not cut up or scattered; they are all on one floor, and as the management has this time not been content with bare rafters and walls, but has made a really pretentious effort at decoration, the general effect on entering the hall is distinctly pleasing. Green and yellow is the prevailing color scheme, looped streamers of those suggestive hues, from which American flags are pendant, concealing the roof of the hall, while the same colors and groupings of flags of all nations on the sides of the building add to the eye pleasing effect of the exhibition. The Chicago papers, which hitherto have been, if not unfriendly, then very lukewarm, have warmed up to the occasion, and are giving the show columns where inches were previously its portion. This increased publicity has not, however, materially increased the attendance, which would seem to argue that Chicago is not yet what may be styled "a centre of automobile interest."

In round numbers, there are 150 exhibitors here, including practically all of the cars that were shown in New York; the most notable absentees are seven foreign exhibitors who showed there but who did not come West. In exact numbers there are forty-four stands of complete cars that are practically duplicates of New York exhibits, and thirty-one displays of cars here that were not seen in the metropolis, all of them Western cars save the German Cudell exhibit. The only other foreign exhibitor is the Darracq Co. Of those that were in evidence in the East three, the Packard Motor Car Co., the National Motor Vehicle Co. and the International Motor Car Co., are exhibiting late additions to their line, the first named a Limousine car and the other two each an electric touring car.

While big touring cars are prominent, they do not dominate this show; the popular priced runabout still retains its popularity in the West. Gasolene, is of course, predominant, but there are more electrics here than at New York, and, incidentally, more electrical batteries. The latter really constitute a feature of the show, and the claims made for them—in the neighborhood of one hundred miles on one charge—are sufficient to make even Mr. Edison rub his eyes and thank his stars that the Western battery makers are lacking such press agents as are apparently at his command.

As the Motor World forecasted, friction driven cars constitute a minor feature of this show, and of those in evidence it is to be said of the Marble-Swift that it is not only ingenious mechanically, but is beautifully made and finished. The Chicago hot air car is also here, and is an exhibit that excites wonder, although it has not advanced since last year, and the claim that it requires "only" fifteen minutes to heat the air and thus start the motor is still made with charming innocence. There are several other kindred "wonders" also to be found.

The Wisconsin Wheel Works, that made their debut here as automobile manufacturers, did so with two striking runabouts, one at $600, the other at $850, and, what was more surprising and of which there was no hint, they are using two cycle motors. They also show another unexpected product, a motor bicycle with a two cycle motor; this in addition to their two other models of the standard four cycle type.

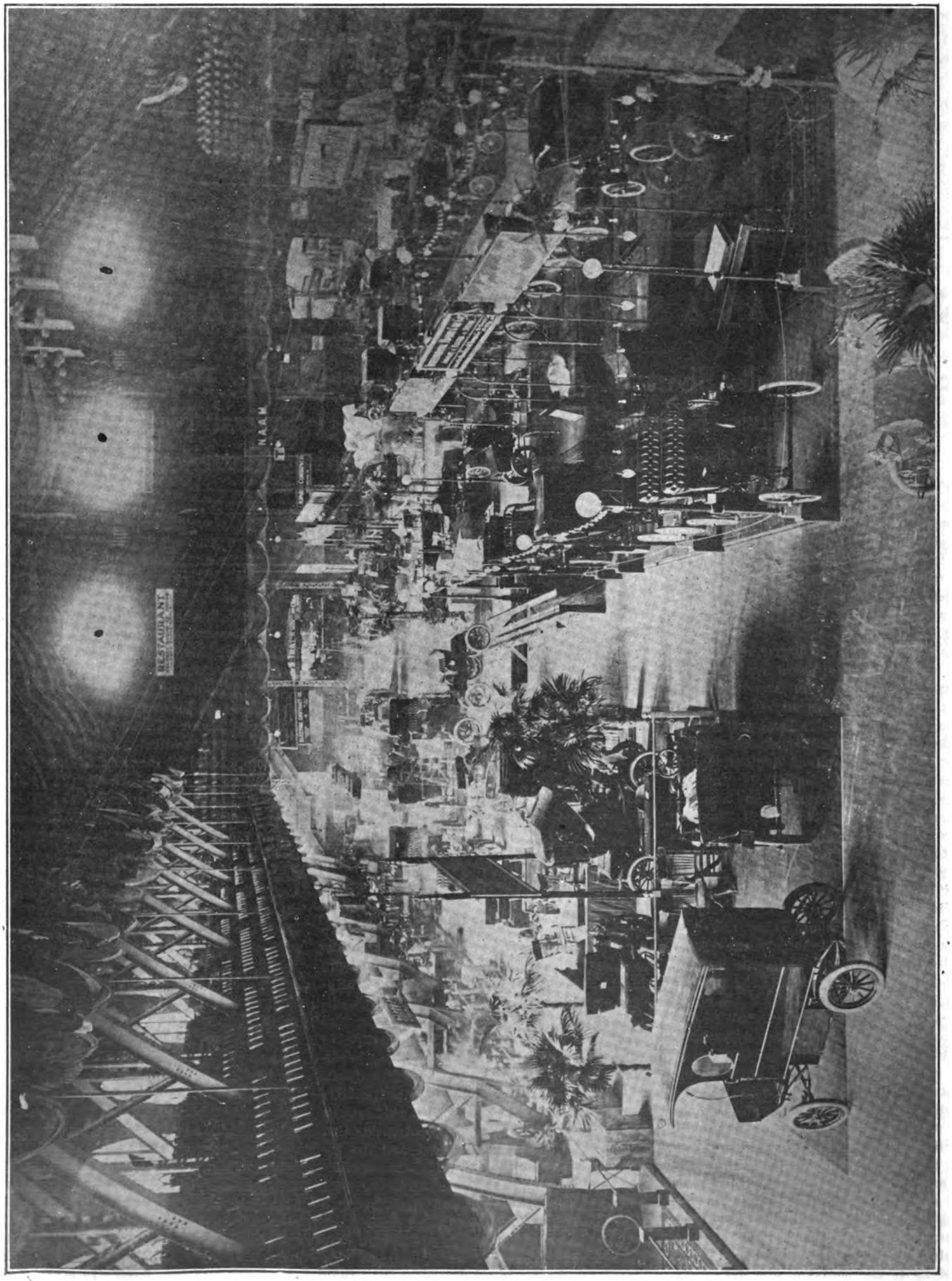
The other most remarkable development of the show is the $3,500 touring car exhibited by J. L. Tincher, which, among other things, incorporates an air brake.

Of the vehicle makers who engaged space but whose booths are still vacant are Matheson, Wick and Speedwell. In addition there

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Chicago, Feb. 18 [By wire].—The show gives no evidence of improvement. The snow and stinging cold weather are keeping down the attendance, and out of town buyers are not sufficiently numerous to account for any considerable volume of sales. The management has, however, issued an order permitting the operation of motors within the building, and the result is noise and action that add to the life of the affair.

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GENERAL VIEW OF THE CHICAGO SHOW.

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are a number of accessory makers in the same category.

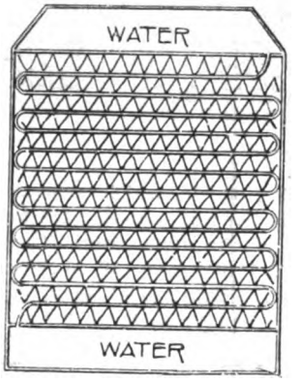
In addition to those already noted, all of the "old reliables" of the trade are here, however, and displaying their cars to good advantage—Olds, Electric Vehicle Co., Winton, Moyea, Searchmont, Locomobile, Baker, Autocar, Haynes-Apperson, Yale, Crest, Cadillac, Rambler, Northern, General, Stearns, Conrad, Thomas, Prescott, Pope-Robinson, De Dion, Elmore, Peerless, Shelby, Stevens-Duryea, American and Long Distance. The best known tires, Diamond, Hartford, Dunlop, G. & J., Fisk and Goodrich, are, as always, prominently in evidence, while Solar lamps, Veeder odometers, Whitney chains, Standard electrically welded parts and Kelly generators, Funk lamps and horns, Splitdorf coils, all well known standbys, are displayed and contribute to the completeness of this show, as they contributed to the New York function.

These concerns and their wares, and the features of the wares, that were not previously in evidence at the New York Show are as follows:

National Motor Vehicle Co., Indianapolis, exhibit in addition to their runabouts and surreys, a fetching electric touring car with tonneau attachment that was not shown at New York. It follows closely the lines of the gasolene cars, having a bonnetted front and being a wheel steerer. It has four speeds both ways; front lever brake on rear wheels; springs half front full rear; artillery wheels, 32x3½; foot plunger cut-out; control handle left seat with button for reverse; the motor and differential are inclosed within one dust and waterproof case, which forms part of the rear axle housing. The batteries are divided—sixteen front, twenty rear. At its price, $1,000, this car should not want buyers.

The Packard Motor Car Co., Warren, Ohio, are showing the cars that were at New York and in addition a Limousine model that would probably cause the Frenchmen to scratch their heads. It has an armored frame, half eliptic springs, artillery wheels, 34x4, French bonnet; four upright cylinders, bevel gear shaft drive, four speeds and reverse; side levers for speeds and emergency brake; pedals for clutch and brake; automatic intake with throttle on intake poppet stems; forced feed lubrication; motor on sub-frame; squared radiation coil placed low down in front.

National Automobile and Motor Company, of Oshkosh, Wis., show two particularly attractive cars, one a $1,450 light touring car, with a tonneau attachment, the other a full touring tonneau car at $2,500, the latter carrying an option on either surrey or tonneau rear. The former has a 72-inch wheel base, and the latter a base of 86 inches. Both types have angle iron frame, supported on semi-elliptical springs. Two cylinders giving 8 H. P. are used n the light car, and four cylinders, giving 16 horse power, on the large model. The motors are of the upright type. Transmission is through sliding gear, three forward and a reverse, running direct on the high speed to a bevel gear driver with spur differential. The drive is controlled by a hand lever at the side of the steering column. The bevel pinion of the driver has front and rear thrust bearings. At the back of the bevel gear is a roller that acts as a bearing to prevent any spread of the pinion and gear due to driving thrust. On the column carrying the driver control lever are the controls for the air carburetter and the spark. Steering is by wheel, through worm gear attached to the upright post. There are three foot pedals, for reverses, the clutch and the brake on the drive shaft. The action of the brake throws in and out the cone clutch at fly wheel. The emergency brake on the rear hubs is operated through a side lever. Cylinders are 4-inch bore and 5-inch stroke. Cylinders and valve housings are cast in one piece on both sizes. One half-time shaft operates both intake and exhaust valves. The main



NATIONAL COOLING COIL.

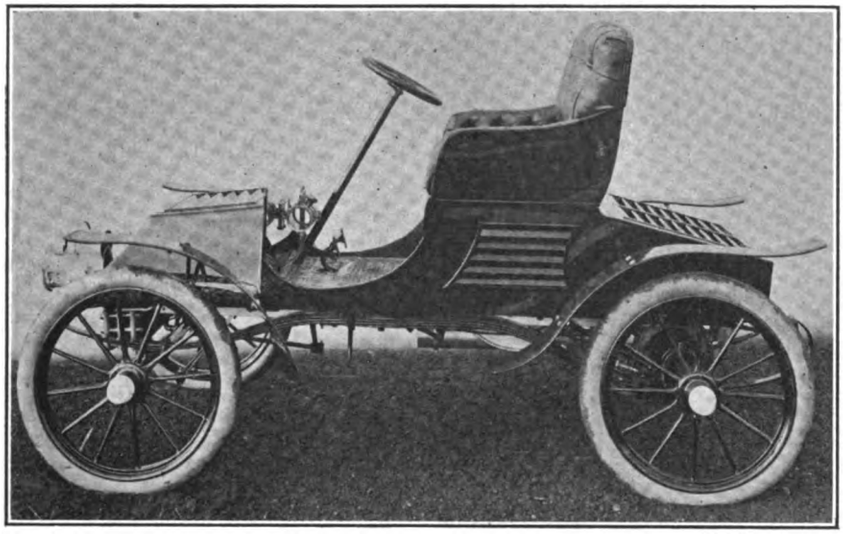
crank shaft has bearings between each crank. All take-ups are easily reached by removing a plate that opens the entire side of the crank case. Large brass cap screws are removable to take out the valve poppets. Ignition is by jump spark, with shifting cam for the contacts. On the half-time shaft is a ball type governor that controls the speed of the engine by throttling the mixture feed. For each two cylinders a separate exhaust pipe runs to the muffler, having a cut out for use when desired. Lubrication to cylinders is by a rotary pump placed above the cylinders and driven by a chain off the motor shaft. Crank lubrication is by splash. Float feed carburetter, made in aluminum, with but one lever, for air; gasolene regulation is by thumb screw for varying quantities. Something new in water radiator is shown on these cars. The shape is of the new upright flat box type, and it is made up of a number of one-eigth inch brass tubes, laid side by side. Each pipe runs complete from the top to the bottom water radiators, weaving back and forth in parallel lines, making half turns at each side. Each pipe thus bends back on itself, and has only two soldered joints, one at the top and the other at the bottom tanks. Between the parallel coils are placed sheets of brass bent to a herring bone line. This construction gives a larger number of thin circular water streams well separated for the action of the air circulation. Back of the radiator is a fan. The gasolene tanks hold twelve gallons, and the water tanks eight gallons. Water circulation is by rotary pump. On the light model 30x3 inch wheels are used, and on the larger car 32x4 are the sizes. Full regular equipment of lamps, horn, tools, etc., are included in the prices. All parts are standardized and made interchangeable.

T. L. Tincher, Chicago, exhibits a tonneau with individual seats, 2,000 pounds, $3,500. It is a wheel steerer and has four cylinder vertical engine with mechanical inlets, rotary pump, box steel wheel frame with hickory core, artillery wheels, 30x4; sliding gear, four forwards and reverse; side chain drive; one side lever; spark and throttle and air brake on steering column; square bonnet; pedal band brake; independent foot pedal for throwing out clutch; air brake mechanism is a compressor, run off motor shaft and works on internal expanding rings on rear hubs.

Fredonia Manufacturing Company, of Youngstown, Ohio, exhibit a runabout, a tonneau and a chassis, all with single cylinder horizontal gasolene motors. The runabout weighs 1,300 pounds, and is priced at $1,000. The tonneau figures are 1,450 pounds, and $1,250. The main frame is of 3-inch channel steel, supported by 1⅝x30 full elliptic springs. The channel is in one piece, starting from the clip of one of the front springs, running to the back, across, and then forward to the other front spring clip, giving plan resembling a large square U. A little more than half way forward is a cross channel tie-piece of the same section as the main frame. Connecting this with the rear cross section of the main frame is another 3-inch channel piece, running parallel with left side main channel plate and spaced about seven inches in the clear. In the parallelogram thus formed is placed the rearwardly pointing motor. To the right of the crankcase is the 200 pound fly-wheel, and to the right of this the transmission gearing. Back of the transmission are carried the gasolene and water tanks. A double back of flanged radiating coils is carried between the front springs. The chain drive running to the rear axle is in a line just inside the left side-frame. The pump is chain driven and bolted to the center cross channel plate. The engine is full 9 H. P., with a 5½x6½ cylinder case in one piece. The intake is automatic. In addition to the regular mechanically operated pappet exhaust, there is an auxiliary relief part which is uncovered by the piston at the end of the outward stroke, as on two cycle motors. This reduces both the pressure and temperatures at the completion of the working stroke, saving on the bearing thrust and reducing the scoring at the exhaust poppet seating. There are also other noteworthy features in this construction, such as quieter exhaust, lower temperature conditions at the water jacket, and less decomposition of cylinder lubricating oil.

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The three main bearings and the half-time shaft running in generous sized phosphur bearings, are split at the top side, giving a simple take-up for wear by turning a cap bolt. Upton transmission is used, one lever controlling the two speeds ahead and the reverse. The carburetter is of the float feed type. Speed of engines is regulated by throttle and shifting spark cam. Jump spark

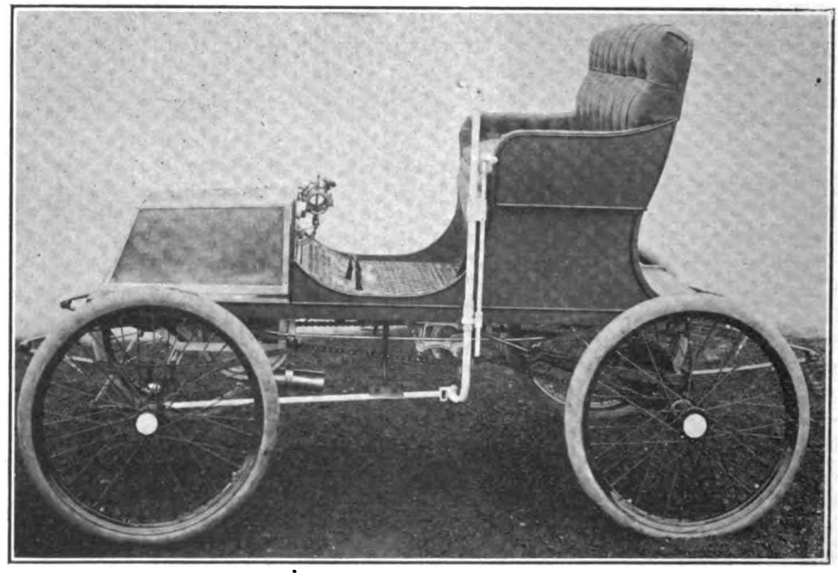


THE 7 H. P. TWO-CYCLE MITCHELL.

is used, the auxiliary exhaust materially assisting in keeping the plug from fouling. The three main bearings are fed from independent grease cups, and the cylinder from a sight oil cup. On the tonneau model the wheel steering column carries a side lever operating the two speeds ahead. The reverse and the brake in the differential are foot-pedal operated. The band brake is double, one band each side of the sprocket, and acts in both directions. Auxiliary band brakes are also provided. Front axle, 1¼ inch, solid forged; rear live axle on the rear hubs, also forged, 1½ inch, running in roller bearing boxes hung from the lower spring clips; front hubs run on roller bearings. Thirty-inch Sarvin wheels of Phineas Jones make, shod with 3-inch tires. Chain is one-half inch roller, 1¼ inch pitch, running on 9 and 30 tooth sprockets. Tanks are coppered steel, eight gallons for gasolene, and four gallons for water. Wheel steering is regular equipment on tonneau; on runabout option is given of side lever or wheel. The running gear is reachless; distance rods run to under side of rear bearing boxes; steel mud guards. Two oil lamps, a horn and full kit of tools are regular equipment.

Wisconsin Wheel Works, Racine Junction, Wis., show for the first time their Mitchell car complete, and in the chassis, also the Mitchell Junior and three models of motor bicycles, all of which have been awaited with considerable interest; they incorporated several surprises. The car sells at $850, and the Junior at $600. The large car carries a two-cycle single cylinder horizontal motor, rated at 7 brake horsepower, on the rear wheels at 800 revolutions per minute. The motor is carried in two cross angle irons that bolt to the side angle irons. These two side pieces run from a point over the front axle to the same position relating to the rear axle, and rest on long-leaf side springs. Toward the front these leaves taper away to the axle clip, and from this point on one leaf is carried forward and then is curved up to the swinging buckle, which connects it to a single fairly flat leaf running back to the forward end of the angle iron. Toward the rear the six leaves taper off to three, where they meet the axle block carrying the roller bearing, and these three taper off to a single up-curved leaf to meet the swing buckle. This buckle connects to one of three leaves which taper off toward it from their junction with the rear end of the side junction with the rear end of the side angle iron.

Planetary transmission is used, with two speeds forward and a reverse, driving direct on the high speed. The forward speeds are controlled by a lever at the outside of the seat. The reverse is through a foot pedal, as is also the braking. Steering is by wheel. Ignition is by jump spark, controlled by a small lever back of the speed lever; throttle is by lever between the other two. Below these is the gasolene control handle. The oiler is on the back of the dash, with three sight feed valves. One feed of oiling takes care of the entire transmission passing into the end of a hollow shaft. The flywheel is under the seat, which tips forward in hinges and is protected from oil by a brass guard. Tanks are of copper. Artillery tubular steel wheels, with 30 by 3 inch tires. The Junior has an angle frame resting on four full elliptical springs. At the forward section is a cross angle piece, and from this to the forward end plate run two angle irons, of smaller section as a sub frame, that support a four cycle air cooled motor, giving 4 brake horsepower at 1,400 revolutions per minute, placed in a diagonal position. The motor has an outside flywheel ,and is cooled by a fan. Over the motor is placed a bonnet of wire, woven to give a pleasing herringbone effect; sides, front and top are of this wire screen, with metal corner bands. Planetary transmission is used, with two speeds and a reverse, driving direct on the high. There are three foot pedals, controlling the reverse, the brake and the slow speed. Steering is at the side, the same column carrying a hand lever for the high speed. On the dash is a three way sight oiler, the spark controlling handle and the gasolene feed control to the carburetter. Wheels are of wire, enamelled, and are 2½ by 28 inches, with single tube tires. In motor cycles last year's model is shown, with detail improvements, and to this has now been added a two cycle model and a larger four cycle motor model, known as the Mitchell Mile-a-Minute; the latter is of 3½ horsepower, and is of unusual length, having a base of 55 inches.



THE MITCHELL, JR., 4 H. P.

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Chelsea Mfg. Co., Chelsea, Mich., show a car with springs of the Olds type, motor on tubular frame from rear axle and leaf springs in front; shaft transmission; tonneau, 20 horsepower motor, two cylinder mechanical inlet valve on top of cylinder, operated by upright side shaft with worm drive. Transmission three frictionless spiral gears, two speeds and reverse; spur differential, brakes on each side differential; wheel steering with telescoping centre rod, giving any up and down position for hand wheel steering post at very acute angle running through dash and platform at side of hood. Mercedes hood and honeycomb radiator. Roller rear bearings front axle solid artillery wheels, ball bearing, 30x3½; speed controlled by throttle; fixed spark; throttles charged at determined speed. Foot button speeds engine up to limit; on release speed drops to throttle regulation. Change of gears by throwing side lever in any one of three positions, forward, high centre, low back reverse. Engine runs free beneath high and low, and reverse.

The Union Automobile Co., Union City, Ind., show a combination two and four-passenger runabout with drop front seat. Frame is made of 2½-inch angle iron carried on four ful eliptic springs. The engine is 6-inch bore and 4-inch stroke; 10 horsepower opposed horizontal cylinders and four cycle. Either touch or jump spark is used, regular equipment being jump. The engine sets crosswise at the rear and drives to friction wheel, giving the full range of speed on forward and reverse. The drive is by chain to a short counter shaft, and then back to a spur differential, the distance rod being attached to the bracket carrying the counter shaft. The engine control and speed shaft are carried on a post forward of the centre of the seat. Tension of the friction drive contact is controlled by a foot pedal. Wheel or lever steering. Braking is by foot pedal on the differential and for emergency the friction drive is thrown to the centre point and the tension foot pedal thrown full on. Water circulation is by gear pump. The ignition is by magneto, with dry battery for starting. The motor is started from the seat by a foot pedal connected by rods to a clutch on the shaft. The clutch has two dogs which fly back out of the way after the motor has been started. The friction drive has a composition plate on the fly wheel face to do away with the troubles found with frictioning on cast iron. The driving member has in the periphery of its wheel a pressed paper shoe to give noiseless contact. The main shaft has a ball thrust at each end. Automatic intake valves are used. A novelty in throttle control is placed between the carburetter and the intake. The control is through a tubular box in which is a tubular throttle valve, giving more or less of a port from the carburetter pipe to the throttle box. Inside this gate is a tubular cut-off operated by an eccentric on the speed shaft. This eccentric has the same amount of movement up and down at all times and running from full opening to a complete cut off. As the throttle valve handle is worked it interposes its cylindrical plate between the opening in the carburetter pipe, and the opening in the cut-off, to admit a full or partial charge as may be desired. Oiling is by compression through the crank box. Gasolene is carried in the back of the seat. Wheels are 34x3½ inches. Mud guards and enameled sheet wheels. Price, $450.

The Briscoe Mfg. Co., of Detroit, Mich., shows a very complete line of radiators, tanks, hoods, fenders and guards and mufflers and manufacture also the various articles in their make up. The hoods shown are of the French type, with taper sides and roll front, taper side with open front and of the square Mercedes type. Radiators are shown in the Olds type, in multiple figure S type with large tubes having flanged washers, also in grouped small quarter-inch pipes laid side by side and running through continuous air plates. A novelty in radiators is shown in a type that presents the appearance of flat plates set on the edge. The plates are about a quarter of an inch apart and an inch high, of any desired depth. These are grouped on a centre plate, extending up and down from same, and any number of these series can be put in a bonnet. The plates are hollow and of very thin copper, giving a large number of thin sheets of water.

Jackson Automobile Co., Jackson, Mich., show a touring car of 1,050 lbs, listing at $850. It has a 7-horse single cylinder, 5x6; mechanical intake, splash lubrication, rotary pump on engine shoft, coil under front bonnet, planetary transmission, two speeds and reverse one lever, foot pedal throttle, artillery wheels, 28x2½; ball front, roller rear; spur differential and chain drive, double band brake foot operated; hand wheel worm gear steering; angle iron frame, ¾ eliptical springs; also a light runabout, 650 lbs, $650; wood frame, four springs, ¾ eliptical; 28x2½ ball bearing wire wheels; air cooled opposed cylinder crosswise under front bonnet; side steering; direct shaft drive to differential; foot throttle; clutch operating handle on steering column; spark lever at seat side; foot pedal reverse; foot pedal brake.

C. W. Russell, Springfield, Ohio, shows a single seat touring car; four springs, ¾ eliptical; wheels 30x3½; frame, tubular of oblong section; horizontal 9 horsepower motor, throttle control and shifting jump spark magneto and dry batteries; throttle and spark lever on wheel steering column; worm steering; planetary transmission; three speeds and reverse, high speed from motor; gear pump to water radiator in front; forced feed lubrication.

The St. Louis Motor Carriage Co., St. Louis. Mo., show a tonneau body on which the tonneau is detachable, and in its place a cover is put forming a luggage box. The body is mounted on a channel iron frame with full elliptic springs in the rear and platform springs in front; 30 by 3½ inch wooden wheels are used, fitted with detachable tires and Timken roller bearings. The motor is a single 9 horsepower horizontal one of 5¼-inch bore by 6-inch stroke, under the seat, facing forward, differing from the usual position, which faces backward. It is water cooled by a gravity feed. The water and the gasolene tanks are placed forward under the bonnet, which is really not a bonnet, but a tank divided into two parts. A float feed carburetter is used. The transmission is by a shifting pinion system, all on one shaft, the transmission being integral with the motor, for which method it is claimed it is impossible to get the shaft out of line. The two forward speeds and one reverse are operated by one lever, another lever being used to release the clutch. The motor has a large flywheel of 24-inch diameter. A single chain drive is used to a differential live rear axle. Rear hub brakes are used, operated by a foot pedal and ratchet. The ignition is by jump spark and batteries, the batteries and tool box being contained in a water proof locker in the dashboard. The car weighs 1,600 pounds, and sells for $1,500. The whole construction looks as if their catch phrase, "Rigs that run," is justified.

The Jones Corbin Co., of Philadelphia, Pa., show an attractive bijou car with individual seats, the body being painted a cardinal color and having long brass fenders, which almost touch the ground, at the back of the rear wheels, and brass trimmings and three brass lamps to match. It has an angle iron frame with half elliptic springs supporting the body on body irons. The wheel base is 6 feet 6 inches, the wooden wheels fitted with 28 by 3 inch detachable tires. Wheel steering is employed, having the gas and spark levers on the steering rod. Roller and ball bearings are used throughout the car. The motor is an 8 horsepower De Dion of the single vertical type, under a bonnot in front of which is placed a Mercedes cooler carrying two gallons of water. The gasolene tank, which holds twelve gallons, is under the seat. Sliding gear transmission is used, with three speeds forward and one reverse, from a bevel shaft to a countershaft having a double chain drive to the rear wheels, all the speeds being controlled by one lever and the cone clutch being operated by a foot pedal. The ignition is by jump spark and dry battery. A friction drive pump is driven from the flywheel, and a gauge on the dashboard shows its operation. Automatic side feed lubricators are also on the back. Two rattan side baskets for luncheon or luggage are on each side of the seat. The car weighs 700 pounds and costs $1,000.

The Marble-Swift Automobile Co., Chicago, show a friction driven, Stanhope bodied car, having a channel iron frame with full eliptic springs in the rear, and half eliptic springs in front, 30x3 artillery wheels with G. & J. tires. The motor is of a vertical two-cylinder type, water cooled by means of a new cooler, which consists of 36 upright flat copper tubes 3x⅛ inches, and about 14

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inches long, placed in the open front of the bonnet in front of the car. It contains 2½ gallons of water. The motor is connected to the transmission by flexible shaft, having a knuckle or tumble-shaft joint. The levers are used for controlling, one lever with a thumb latch for locking the lever in position, putting the friction drive into play; the other for changing the speed. A foot lever is also provided for operating. Wheel steering is employed, a support or parallel pillar being alongside the steering rod on which three small hand levers are grouped for advancing the spark, for throttling the air, and for regulating the mixture. The gasolene tank is most ingeniously arranged in the back of the seat, between the body and the cushion, a filler cap being provided on the top of the seat so as to fill it. This tank holds nine gallons of gasolene. The car weighs 1,500 pounds, and costs $1,500. A miniature working classis is shown. It is certainly a handsome and beautifully finished car.

The Chicago Moto Cycle Co., Chicago, show their caloric motor or hot air gas carriage with a single seated body, having the front of it shaped like the toe of a lady's slipper. It is mounted on four elliptic springs on a channel iron frame. Wire wheels with detachable tires are used. Roller bearings are used on the rear axle and ball bearings on the front. The motor is of a two-cylinder horizontal type, and is started from the seat by a ratchet and pawl which is connected to it by a cord and wooden handle knob. The cylinders are of 4-inch bore by 4⅝ stroke, developing 4½ horsepower at 400 revolutions. No electrical devices, carburetters or water cooling are used. Heat is applied at bottom of cylinder by gasolene flame. Air is taken in and compressed in upper cool end of cylinder, then transferred to lower heated end, where it expands and forces piston outward; the hot expanded air is then expelled from heated end at the same time another cool charge is taken at the upper cold end of cylinder, and the operation is repeated, giving an impulse every revolution. The constant taking in of cold air in top of cylinder and passing it down the inside walls of cylinder then exhausing from heated end keeps cylinder cool. As a combination air and gas engine, the operations are the same when working as an air engine, except that gas is taken in with the air. The explosion increases the power according to amount of gas admitted. Gas is made by passing supply pipe around exhaust valve. Engine responds as readily to gas valve as a steam engine to its throttle. When engine is using gas internally gas flame is not used externally. After bottom of cylinders are red hot (this takes ten or fifteen minutes) the engine starts. The transmission on the half speed is by a planetary system, the full speed is direct and the slow speed is by clutch on a counter shaft, the reverse being obtained by a combination of these. Lever centre steering is employed and the single hand control regulates the speed of the motor. The drive is by a single chain to a differential live rear axle. The carriage costs $800. A three cylinder motor is also shown.

The Lozier Motor Co., Plattsburg, N. Y., show a handsome white launch with solid mahogany deck and wood trimmings with all metal trimmings of brass. It is twenty feet over all, with a 5-foot 6-inch beam and drawing only seventeen inches of water when loaded. It carries fourteen passengers in the cock pit. Water tight collision bulk heads are carried in the bow, which also carry enough gasolene for a 400-mile run. The gasolene supply pipe for the motor is carried along the edge of the keel on the outside of the launch, a safety fire precaution. The motor is of vertical 2-cycle type, developing 3 horsepower to 400 revolutions, at seven miles an hour. The price of the launch is $675, a reduction of $50 being made when oak trimmings are furnished.

The Rapid Motor Car Co., Ltd., Grand Rapids, Mich., did not have their touring car on view up to Tuesday. It has an attachable tonneau listing at $3,000 and weighing 2,000 pounds, varying with the equipment. The frame is of angle iron, inside of which is a sub-frame carrying the motor and transmission mechanism, and supported on five half elliptic springs. Wheels are 32x4, artillery; the motor is 15b. horsepower, two cylinder, four cycle, vertical. Cylinders are 5x6, with brass water jackets. Ignition is by jump spark from friction-driven dynamo, operating at slow speed. Battery is supplied for emergency uses. Radiation by copper tubes, with copper pins in front of car between the springs. Circulation is by pump. Three speeds and a reverse operated by one lever through what is claimed to be a transmission of new design, providing three speeds and a reverse, operated with one lever. The gears are spur type and so arranged that only these under power are in motion. An individual wheel drive is used by means of which the rear axle is constructed in one piece. Drive is by chain. The differential is of the spur type located on the counter shaft. Band brakes are on the rear wheels and on the counter shaft. They may be operated by either the hand lever or a foot lever, the hand lever locks at any point. Interlocking wheel steering is used. The equipment includes one large acetylene headlight, two oil side lamps, one oil rear lamp and brass horn with flexible tubing.

Auburn Automobile Co., of Auburn, Ind., show a neat looking car with a square but distinctly pleasing bonnet front, giving ample storage space, and attachable tonneau. The frame is of 3x1½-inch angle iron, resting on four ½-elliptic springs. Wheels are 28x3-inch artillery, running on roller bearings. Engine is water cooled, horizontal, four cycle, single cylinder, 4½x6 inches, running from 150 to 1,400 revolutions. Planetary transmission, with two speeds, by hand side lever. Reverse is by foot pedal. Brakes on transmission and rear axle operate from the same foot pedal. Spark control at side of seat. Individual seats and wheel steering. In runabout type the price is $900; with tonneau, $1,000.

Friedman Automobile Co., of Chicago show four vehicles and an opposed motor in section, driven by power, on a stand. All frames are of wood, with angle iron reinforcement carried on platform springs. Artillery wheels, 30x3 inches. Three machines have horizontal, water cooled, opposed cylinders and drive of the friction wheel type. Motors are four cycle and 3¼x3, placed crosswise at the rear of the body. One controlling handle is used to shift the friction drive wheel to either side of the centre, and this lever is at the left hand side of the seat. Handle steering is used and a foot plunger for shifting the spark. The fourth vehicle has a single cylinder horizontal motor, 4-inch bore by 5 stroke, and drives through a planetary gear and chain, with speeds controlled by a hand lever at the left and foot lever off the reverse. The brake is on a drum separate from the differential and is operated by foot lever. Spark shifter is at the left side of the seat; steering is by handle. On all models water circulation is by rotary pump through cross tubes which make up the curved dash box front.

Columbus Motor Vehicle Co., of Columbus, Ohio, show a runabout with single cylinder and tonneau and chassis with opposed horizontal cylinders. The vehicles are named Santos-Dumont. The frame is of channel iron carried along the sides and back and carried at the rear on full elliptic springs and at front with ½-elliptic springs attached to shackles. Wheels are 30x3½, of the artillery type. The steering is by handle through a worm. The cylinders set off the centre of the crank case and are 4½x5, four-cycle, water jacketed and 12 horsepower. The motor is hung just back of the centre and to the left and drives through spur transmission gear with two speeds and reverse, by chain to differential, carried near the right rear axle bearing. Spark and throttle levers are carried on the wheel steering column. A novelty in the motor construction is that the air for the carburetter is taken through a long pipe into the crank chamber and from there passed through the carburetter under compression. Intake valves are automatic and sparking is of the wipe type. Water is carried by force pump through a coil placed between the forward springs. Combined gasolene and water tank is carried under French bonnet. The transmission works on the principle of the back gear of lathe and when the vehicle is standing still, with motor running, it becomes idle. An expanding clutch connects the transmission with the flywheel and the two speeds and reverse are all operated by single lever moving backward and sideways, operating on segments.

Flint Automobile Co., Flint, Mich., show a Flint Roadster with 2½-inch angle iron

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frame forming a complete loop, supporting eht motor,carried on four ¾-elliptical springs. Artillery wheels, 28x3 inches. Motor is single cylinder, horizontal, water jacketed, 5¼ bore by 6 stroke, giving 8 horsepower at 750 revolutions; speed ranges from 150 to 1,100; automatic intake; planetary transmission, with two speeds and reverse. Forward speeds are controlled by hand lever forward of right side of seat, reverse is by foot lever. Throttle and spark levers at one side of seat. Brake on differential operated by foot lever. Gasolene tank holds nine gallons; water tank, seven gallons; radiation through coil under part hood, and by rotary pump; hood is used as a tool box. Jump spark ignition with dry battery. Steering is at the side and drive is direct by chain.

The Bartholomew Co., Peoria, Ill., show three Glide runabouts, selling at $750, with single seat, and $775 with dos-a-dos. The body is supported on ¾-elliptic springs at front and long-leaf drop springs at back. Wire wheels, 28x2½ inches are regular equipment, but wood wheels will be supplied at extra cost. Front wheels run on ball bearings and rear shaft in a tube on four roller bearings. The motor is carried on a U-shaped loop, the ends of which are in leaf spring form, resting in blocks on the rear axle, and the curve supported on a toggle hanging from a cross bar at about the centre of the frame. The motor is a four-cycle, single-cylinder, horizontal, placed centrally and of 6 horsepower, with mechanical intake. Planetary transmission, with two speeds and a reverse, through a ½x1½ inch chain. Side lever control for forward speeds, with one foot pedal operating both the reverse and differential brake. Emergency brake and throttle each have separate foot pedals. Jump spark is used, with control at side of seat, through dynamo and battery. Water circulation is through a coil placed under a short front hood, and by rotary pump. Steering is by lever acting through an eccentric at base of steering column. The transmission is on an extension of crank shaft and can be removed by taking off three nuts. The foot platform is attached direct to the running gear, the body coming off independently without disturbing various controlling levers.

Kammann Mfg. Co., Chicago, show an electric carryall with three seats, the second seat entering as a surrey and the third from the rear of the vehicle. The frame is made of channel iron with many cross under brackings and two diagonals in flat plates. It is mounted in ¼-elliptic springs, which run from the body diagonally to a point close to the hubs. The wheels have tubular spokes, with 30x2 inch solid tires, and run on ball bearing rings placed at the centre line of the hub. The rings in the forward wheels are pivoted at their centre line, thus bringing the wheel and hub well over the steering pivot. The body proper is made up of sheet aluminum with frosted effect. The jar of the road is taken off by using pneumatic seat, back and side cushions. The dash is a plain straigh dash and the mud guards run through from the extreme front to the extreme rear. The motor drive is on a long shaft running to brackets a short distance forward of the rear hubs, and the drive from here back is taken by a short chain ⅜x1¼. Side steering is used and the three speeds and reverse are controlled by a handle outside the left end of the front seat. Near this handle is the switch for forward and back running, which automatically throws in when the control lever is thrown for reverse. The vehicle is an oddity in its design and finish.

The Woods Motor Vehicle Co., Chicago, was one of the earliest and most pretentious of the Western makers of electric vehicles. A recent organization placed the concern on a sound footing, and enabled it to adopt a thoroughly progressive policy. A complete line of Woods vehicles was shown, covering practically all the types known to the high class carriage builder. Of these the closed vehicles—coupes, broughams, victorias, etc. —were especially noteworthy. Exide, Porter or Helios-Upton batteries are supplied, and a radius of fifty miles on one charge is given.

Wagner Cycle Co., St. Paul, Minn., show a motor bicycle and a motor tandem with a rear drop frame. The former sells at $200 and the latter is placed at a price of $225, being a moderate advance for the additional facility.

Standard Motor Vehicle Co., Chicago, show an angle iron running gear, 32 by 4 wheels, side chain drive. Their motors and vehicles have not yet turned up.

Porter Battery Co., Chicago, show a car claimed to have been run 187 miles one charge of their 12-cell battery.

Northwestern Battery Co., Chicago, show vehicle which, it is asserted, covered 96½ miles with one charge of their 12-cell battery.

Buffalo Electric Carriage Co. show two Stanhopes and one golf brake.

Waterloo Gasolene Engine Co., Waterloo, Iowa, show the Duryea gasolene cars.

ACCESSORIES

Brecht Automobile Co., St. Louis, show a running gear without engine or transmission. The frame, made of angle iron forming a complete loop of the four sides, is suspended on half elliptic springs hung from shackles; artillery wheels, 3x30 inches; roller bearings and brake bands on rear hubs; steering wheel with worm and gear. The forward ends of the rear springs carry in their shackles the distance rods. A body shows individual seats, removable rear lid and brass French type front bonnet.

Alfred Vischer & Co., New York, show the Eisemann igniter, which consists of a light but powerful magneto and induction coil. Attached to the magneto and forming a part of it, the entire apparatus minus the coil is self contained, is the commutator device for sparking any number of cylinders automatically. This commutating device runs synchronously with the magneto armature. The armature is wound so as to be highly self-inductive, thus performing the office of a spark coil in addition to generating the current. A hot spark is obtained at slowest speeds. Uniform high speed is not required. Magneto is geared direct or run by any form of transmission. Ignition may be advanced or retarded to any part of the stroke.

Cushman Motor Co., Lincoln, Neb., show a line of two cycle water jacketed motors. A description of the 3 horsepower motor will serve to illustrate all Cushman motors of whatever size, all being built on the same general lines. This motor is 20 inches over all and weighs 100 pounds. The rating is at 1,000 revolutions. 4 b. horsepower, all claimed at 1,300 revolutions, and 5 horsepower, at 2,000. Using the crank chamber for the compression to force the mixture to the cylinder a ring device is used to prevent leaking at the boxes. Jump spark ignition is used with a mica plug. A shifting spark controller is attached to the crank shaft to prevent kicking in starting. Speed of the engine is controlled through a throttle.

Hine-Watt Mfg. Co., Chicago, show their automatic acetylene gas lamps for both front, side and rear uses. In these lamps a gas valve regulates the size of the flame by means of a gas cock. The carbide cock is a reloadable cartridge. The water is carried through a winged distributor. The burner is removable and is non-carbonizing. A splash diaphragm in the water can prevents waste of water when lamp is used on rough roads. Gas is generated at low pressure and this, with the separable burner, gives a clean burning lamp requiring but little attention, and this is of the "quick working" kind.

Brandenburg Bros. & Alliger, New York and Chicago, are showing the Thor motor bicycle parts and Trebert gasolene motors. The latter are of four cycle upright type in two or four cylinders, with large inlet and exhaust valves, both mechanically operated. Inlet valves are on the right side of the cylinder and exhaust valves on the left, with a sparking plug placed above the inlet. The cylinders are 4⅛x5 stroke. The valves and plug can be removed by removing a yoke nut and lifting the chamber head. This makes it possible to inspect the spark plugs without disturbing the wire connections. cam shafts are directly under the valve stems, with a large roller fitted in the lifter. Crank shaft has journals between each crank. The flywheel is bolted on crank shaft disk. The cylinders are bolted to the base. Engine frames have four extending arms for attaching to frame of running gear.

Hoffman Motor Co., of Chicago, show a two-cylinder upright engine with automatic intakes, cylinders 4x5, water jacketed, giving 8 horsepower at 800 revolutions. The secondary shaft extends along the front of

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the base and outside, working the exhaust valves and the shifting spark cam. Also a water jacketed horizontal motor with 4¾x6 single cylinder, giving 7 horsepower at 500 revolutions. A 16 horsepower 4-cylinder motor is also exhibited, having the same constructive features as the two-cylinder engine.

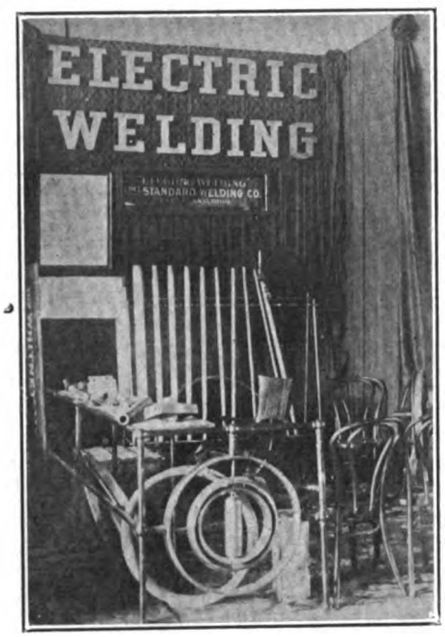
P. J. Dasey Co., Chicago, shows Ruteuber upright water jacketed motors in two and four cylinders of 4, 6, 8 and 10 horsepower. These have outside flywheels, automatic intake valves, jump spark ignition. Sizes of cylinders for 6 and 10 horsepower are 3¾x4 and 3½x4 respectively. In horizontal water jacketed motors, two types are shown; one with transmission gear attached. Cylinder size, 4½x6, giving 5 horsepower at 1,400 revolutions. Automatic intakes; transmission of sun and planet type. Full line of parts, materials and equipments. A vehicle is also shown named the Monarch, made up with horizontal motor of the type having transmission attached. The frame is of angle iron resting on full epiliptical springs at the back and ¾ eliptic in front. Two speeds forward, controlled by side lever and a reverse by foot pedal on differential that also brakes on the transmission. The spark shifter and throttle are combined in lever at side of seat. Handle steering. In starting this motor there is no compression to crank against. The intake valve butts at its top against a rubber buffer, which holds it slightly open as motor is started. The effect of the first explosion and subsequent charges is to force this valve against the buffer, which permits the poppet to come to a full seat.

Imperial Wheel Co., Flint, Mich., show artillery wheels with wood hub confined within metal flanges. The entire wheel is made before assembling the flanges. The front and rear flanges have reinforcements in which a key seat is made to fit the axle desired, thus bringing the drive of the machine on the flange at the centre of wheel. This construction leaves the axle at full size.

John F. McCanna Co., Chicago, show a line of oilers of the force speed system. These are made with any number of outlets. Sight feeders are placed on the front of a box-like metallic container, in the centre of which turns a gear wheel driven by a worm, the shaft of which carries a pulley run from the engine by belt or other means. The central gear drives as many plunger pumps as there are sight feeders, there being one pump for each outlet. Any pump in the system can be cut out of feed and all feeds are adjustable for any amount. An attached pressure gauge shows force against which pumps are working.

The Miller-Knoblock Electric Mfg. Co. South Bend, Ind., show an ignition dynamo having a magnetic generator carrying with it a set of field coils which surround the permanent magnets. The object of this is to do away with the use of spark coil, the field coils performing this duty. By passing the current through the field coils around the magnets the latter are charged with magnetism to their full capacity to give the machine at all times high efficiency. By the use of both field coils and permanent magnets it is claimed that the advantages are obtained of the dynamo and magneto combined, with the addition of eliminating the coil. The speed can vary from a few hundred to five thousand revolutions.

Chicago Storage Battery Co., of Chicago, is showing a new system of storage battery that is alkaline and trimetallic. It is charged at any rate that the cell terminals will carry. They weigh 5½ pounds per cell, with a hundred amperes per cell, and an electro-motive force of 1.4. They are made without lead grids or plates, and can be



STANDARD WELDING CO.'S EXHIBIT.

charged in one hour. At this exhibit is shown a novelty in testing by mounting a vehicle on rollers. The vehicle is run to show the speed with different numbers of cells and the distance is indicated on the large dial.

The Turner Brass Works, Chicago, show their well known line of torches and samples of aluminum castings. Their particularly interesting exhibit is the Turner carburretter. It is positive feed in that unless purposely throttled it feeds the same amount of gasolene at every suction stroke, regardless of the motor speed. The regulation is by the means of a ratchet and half gear that work together to control the proportioning of gasolene passing by the needle and the air through the mixer.

The Barton Boiler Co., of Chicago, show a flash boiler of interchangeable construction throughout. It is made up of fourteen or more units of coils. These coils are spiral in curvature and the piping is then carried twice across in a double loop, reaching to the outside of the coil, where it is connected to the next unit. It is claimed for this construction that it particularly facilitates repairs or other necessary getting at the tubes, as by loosening any two couplings all the coils above can be thrown back in order to get at the coil needing attention.

Northwestern Storage Battery Co., Chicago, show a pasted plate battery giving about six amperes per pound. The sizes ar shown for automobiles, one at 15 pounds per cell, 90 amperes, and 4½ hours, and the other at 19 pounds, 120 amperes, 6 hours.

American Gasolene Motor Co., Chicago, show a planetary transmission gear with two speeds and reverse or one speed and reverse, in three sizes, taking in from three to twenty horsepower. One brake band is used for slow speed forward and reverse. Slow speed forward is obtained by tightening brake band to secure any speed up to six miles an hour. Fast speed forward is by releasing brake band and engaging friction clutch direct. Slow speed reverse by shifting collar next to sprocket and tightening outside brake band. The features for this gear is that it has an emergency brake band without using the foot brake, giving two brakes without extra attachments. All speeds, including emergency brakes, can be attached to one lever or any other device used.

Anti-Friction Equipment Co., New York, show the Beasley tires, constructed on the principle of a truss bridge. The tire is practically made up of two parts, an outer casing with thick wall, and an inner tubular section having webs running in a zigzag fashion throughout the entire length. The tire is made in 2½ to 3 inches in cross section and 28 and 30 in diameter, with 5 and 8 lugs, of standard spacing.

National Engine Co., Rockford, Ill., show a stationary upright engine attached to a dynamo for electric vehicle charging purposes. The fuel is fed positively by a pump into the air pipe at every working cycle, and always with the same quantity, thus giving the same pressure on the piston. The engine is equipped with both a make and break electric ignition and incandescent tube.

The Standard Carriage Lamp Co., Chicago, show a complete line of acetylene lamps of all types, sizes and weights, for both front, side and rear siggnal uses, also electric lights of the same description. Generators are made that can be placed inside the vehicle, the gas being conducted through a tube. Carbide and water system is self controlling. Lamps are furnished in either nickel or brass, or combined with Japan finish.

Porter Battery Co., Chicago, show in addition to their well known type A batteries for electric vehicle use, a special battery for sparking gasolene motors, put up in dry form, that can be charged from any 110-volt, direct current lamp. The capacity is six volts, 35 to 40 ampere hours and the weight 16 pounds. It is claimed that with a 1-5

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ampere coil this cell is good for 200 hours' continuous running without charging.

K. Franklin Peterson, Chicago—Cleveland-Canton springs, Midgeley tubular wheels, Baldwin chains and Konigslow steering wheels.

Hercules Electric Mfg. Co., Indianapolis—Spark generators.

Warner Differential Gear Co., Muncie, Ind.—Spur equalizing gear.

Western Storage Battery Co., Indianapolis, show pasted plate cells, hard rubber separators with ribs and spun glass packing close in case to prevent buckling.

Carl Fisher, Indianapolis, shows storm aprons and under body protection aprons.

American Tubular Wheel Co., Pittsburg, show their tubular wheels.

Tennant Auto. Tire Co., Springfield, Ohio, have a puncture proof tire with brass plate in tread, side walls being extended by two oval shaped sections of sponge rubber.

The following exhibited duplicates of their New York displays:

CARS.

Winton Motor Carriage Co., Cleveland, Ohio—Winton gasolene cars.

Pardee & Co., Chicago—American and Centaur gasolene cars.

F. B. Stearns Co., Cleveland, Ohio—Stearns gasolene cars.

Geo. N. Pierce Co., Buffalo, N. Y.—Pierce and Arrow gasolene cars.

Studebaker Bros. Mfg. Co., South Bend, Ind.—Studebaker electric vehicles.

Peerless Motor Car Co., Cleveland, Ohio—Peerless gasolene cars.

General Automobile & Mfg. Co., Cleveland, Ohio—General gasolene cars.

E. R. Thomas Motor Co., Buffalo, N. Y.—Buffalo gasolene cars and motor bicycles.

Electric Vehicle Co., Hartford, Conn.—Columbia electric and gasolene cars.

Locomobile Co. of America—Locomobile steam and gasolene cars

Apperson Bros. Automobile Co., Kokomo, Ind.—Apperson gasolene cars.

Knox Automobile Co., Springfield, Mass.—Knox gasolene cars.

Elmore Mfg. Co., Clyde, Ohio—Elmore gasolene cars.

Ralph Temple & Austrain Co., Chicago—U. S. Long Distance, Franklin, C., G. & V. and Panhard gasolene cars.

International Motor Car Co., Toledo, Ohio—Toledo steam and gasolene and Waverley electric cars.

Olds Motor Works, Detroit, Mich.—Olds gasolene cars.

Haynes-Apperson Co., Kokomo, Ind.—Haynes-Apperson gasolene cars.

Searchmont Automobile Co., Philadelphia, Pa.—Searchmont gasolene cars.

Cleveland Automobile Co., Cleveland, Ohio—Cleveland gasolene cars.

Moyea Automobile Co., New York—Moyea gasolene cars.

Prescott Automobile Co., New York—Prescott steam cars.

Frank P. Illsley, Chicago—Autocar and Northern gasolene cars.

Shelby Motor Car Co., Shelby, Ohio—Shelby gasolene cars.

J. Stevens Arms and Tool Co., Chicopee Falls, Mass.—Stevens-Duryea gasolene gears.

Thomas B. Jeffery & Co., Kenosha, Wis.—Rambler gasolene cars.

Cadillac Automobile Co., Detroit, Mich.—Cadillac gasolene cars.

Kirk Mfg. Co., Toledo, Ohio—Yale gasolene cars.

Crest Mfg. Co., Cambridge, Mass.—Crestmobile gasolene cars.

Conrad Motor Carriage Co., Buffalo, N. Y.—Conrad gasolene cars.

Hoffman Automobile Mfg. Co., Cleveland, Ohio—Hoffman gasolene cars.

Merkel Mfg. Co., Milwaukee, Wis.—Merkel motor bicycles.

Pope-Robinson Co., Hyde Park, Mass.—Pope-Robinson gasolene cars.

American Darracq Automobile Co., New York—Darracq gasolene cars.

Sandusky Automobile Co., Sandusky, Ohio—Sandusky gasolene cars.

ACCESSORIES.

Electric Contract Co., New York—Steam gauges, speedometer, lights, etc.

Electric Storage Battery Co., Philadelphia, Pa.—Exide storage batteries.

Veeder Mfg. Co., Hartford, Conn.—Veeder odometers and tachometers.

Shelby Steel Tube Co., Pittsburg, Pa.—Shelby weldless steel tubing.

Whitney Mfg. Co., Hartford, Conn.—Whitney Standard and Wizard chains.

Standard Welding Co., Cleveland, Ohio—Standard electrically welded tubing and parts.

Grey & Davis, Amesbury, Mass.—Lamps.

Joseph Dixon Crucible Co., Jersey City, N. J.—Lubricants.

Rose Mfg. Co., Philadelphia, Pa.—Lamps.

Timken Roller Bearing Co., Canton, Ohio—Timken roller bearings.

Twentieth Century Mfg. Co., New York—Twentieth Century oil and acetylene lamps.

Brennan Mfg. Co., Syracuse, N. Y.—Brennan gasolene motors.

R. E. Dietz, Co., New York—Lamps.

Badger Brass Mfg. Co., Kenosha, Wis.—Solar acetylene and oil automobile lamps.

P. J. Dasey Co., Chicago—Dow coils and spark plugs, Apple igniters, Champion gears, Rutenber motors and Salamandrine boilers.

National Carbon Co., Cleveland, Ohio—Columbia dry batteries.

Westinghouse Co.'s Pub. Dept., Pittsburg, Pa.—Westinghouse electric charging apparatus.

Muncie Wheel & Jobbing Co., Muncie, Ind.—Bann-Auto patent wheel.

H. W. Johns-Manville Co., New York—Asbestos specialties.

E. J. Willis, New York—Motors and parts and Herz spark plugs.

Motsinger Device Mfg. Co., Pendleton, Ind.—Auto-sparkers.

A. H. Funke, New York—Kelecom motors, Autolyte lamps, horns and spark plugs.

C. F. Splitdorf, New York—Spark coils.

TIRES.

Hartford Rubber Works Co., Hartford, Conn.—Hartford, Dunlop and Turner tires.

Diamond Rubber Co., Akron, Ohio—Diamond single tube and detachable tires.

B. F. Goodrich Co., Akron, Ohio—Goodrich detachable and single tube tires.

J. & G. Tire Co., Indianapolis, Ind.—G. & J. detachable tires.

Firestone Tire & Rubber Co., Chicago—Firestone solid rubber tires.

Fisk Rubber Co., Chicopee Falls, Mass.—Fisk single tube and detachable tires.

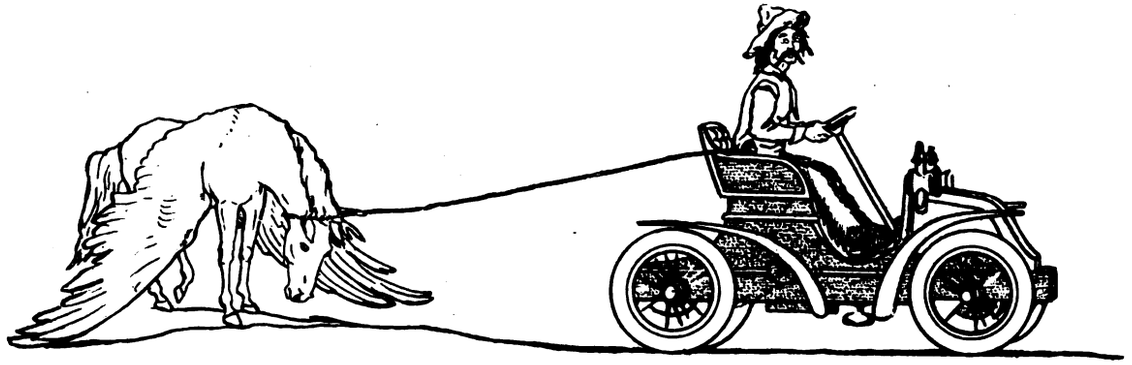
Recent Incorporations.

Brooklyn, N. Y.—Wood Vapor Vehicle Co., capital, $50,000. Directors—J. C. Wood, C. T. Sauer and E. S. Wood, Brooklyn.

Beaumont, Tex.—Beaumont Cycle & Automobile Co., with $10,000 capital. Corporators—F. L. Rollins, H. C. Ford and J. S. Rollins.

Buffalo, N. Y.—The Roe Automobile Co., with $10,000 capital, to buy, sell, lease and deal in automobiles. Corporators—Charles W. Roe, Clarence B. Hunter and David Macfeat.

Corning, N. Y.—Gibbs Engineering & Mfg. Co., with $1,000,000 capital, to manufacture motors and machinery, in connection with self-propelling vehicles and engines, car trucks, locomotives, boats and vehicles. Directors—Samuel Riker, jr., Percy J. Fuller and Charles M. Kirby, of New York.



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LONDON SHOW WAS BARREN.

In every respect save that of magnitude the British show at the Crystal Palace, London, was a poor second to the Paris function of last year. There was nothing approaching the sensational about it.

If there was little to enthuse over, however, it was apparent that British designers are not yet ready to follow the example of their Gallic rivals and assume the role of copyists. There was much to suggest the best French and German practice; but with it all there was a distinct note of individuality. A very considerable number of makers adhered to their own designs.

British makers, too, are in the majority. Slightly more than sixty makes of British cars were shown, to about twenty French, eleven American and three Germen.

Of the three German features that carried the Paris show by storm—the honeycomb radiator, the mechanical intake valve and the U shape pressed steel frame—only the first named was specially prominent at the Palace show. The others were seen on a number of stands, but were very far from being general. In fact, in the matter of frames the tubular type shows a distinct gain, although no one seems able to explain why.

As in this country, the gasolene car has a long lead. It formed the great bulk of the exhibits, comprising quite three-quarters of the whole.

But steam is far from being neglected. The traditional British fondness for this form of power is well known, and a very good showing was made. American influence was, as always, strong. The well known runabout type had a good lead, but, as at the Madison Square Garden show, the familiar gasolene form made its appearance on British as well as American cars. Of the flash and semi-flash systems of steam generation examples were shown from England, France and America, viz., the Albany, the Serpollet and the White. In addition to the latter, the Toledo, Locomobile and Weston (Grout) were shown.

In the gasolene and electric sections the Oldsmobile, Winton, Northern, Rambler and Baker were staged, most of them by their British representatives.

Scarcely a French or German car of prominence was missing.

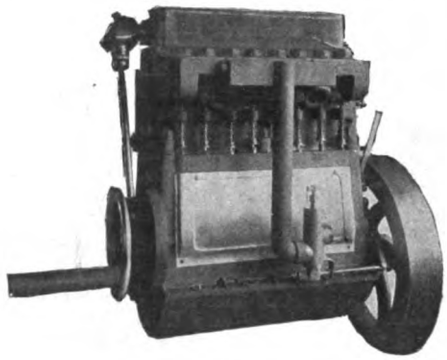
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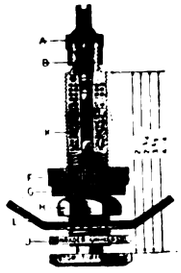
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PHILADELPHIA, Wm. F. Rudolph, 302 N. Broad St.
BOSTON, H. B. Shattuck & Son, 239 Columbus Ave.
CHICAGO, Pardee & Co., 1404 Michigan Boulevard.
LOS ANGELES, Norman W. Church, 439 S. Main St.
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VEEDER'S SPEED INDICATOR

Details and Operation of the Ingenious Instrument Finally Disclosed.

At the recent show the Veeder Tachometer attracted wide atention. It was recognized as an ingenious and eminently practicable article, and one that would tell the story of car speeds so clearly as to render mistakes impossible. The name of Veeder stamped it as sound mechanically, while even a superficial examination made it plain that the details had been carried out in a manner quite beyond criticism.

The device is compact, handsome, and so disposed as to be in the way as little as possible. It is made in two styles, Form A, for automobiles, and Form C, a portable instrument for registering the revolutions of shafting, motors, etc.

There are two principal parts: The pump, consisting of a casing inclosing a paddle wheel mounted on a shaft, and the indicator, embracing a glass indicator tube, a scale and a reservoir. These parts are connected by two rubber or copper tubes.

The periphery of the pump is connected with the bottom of the glass indicator tube by suitable passages or tubing and the bottom of the reservior communicates with the centre of the pump.

The Tachometer is filled with a suitable liquid, generally colored alcohol, so that when at rest it stands on a level with the zero mark on the scale beside the indicator tube. The surface of the liquid in the reservoir will be slightly lower than in the tube on account of the capillary attraction of the latter.

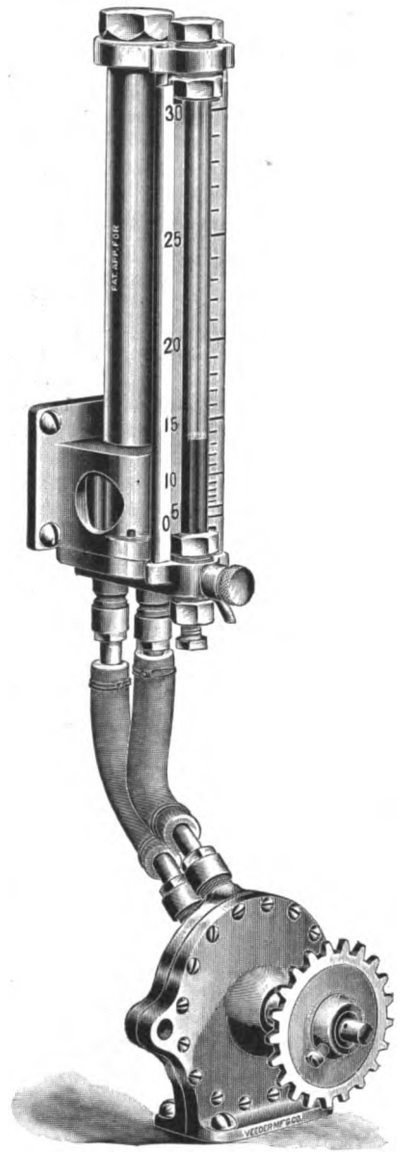
When the paddle wheel in the pump is revolved, the centrifugal force draws down the liquid in the reservoir and forces it up in the indicator tube. The vertical height between the two surfaces will be approximately proportional to the square of the speed of revolution.

The connecting tubes or piping may be of any desired length, provided there is at all points an upward inclination from the pump to the indicator.

For convenience the reservoir is placed close to the indicator tube and communicates with the top of the latter, so that the instrument may be sealed to prevent evaporation, and if the liquid should be forced by excessive speed to overflow the top of the tube it will flow back into the reservoir. If the reservoir is placed in front or behind the indicator tube on a moving vehicle, then, when the speed of the latter changes, a change in level between the two surfaces of the liquid will take place on account of the inertia of the liquid and independently of the change due to the pump. A similar change will take place when the indicator is tipped to one side or inclined when the vehicle is going up or down a hill. These changes are, however, very slight, and in ordinary practice are negligible. They may be entirely overcome by making the axis of the reservoir concentric with the axis of the indicator tube.

It will be seen that the instrument is extremely simple in construction, and can be made very durable, since the only wearing parts are the shaft and its bearings. There are no small pivots or wheels to wear out nor springs to break and the calibration is constant.

To adjust the level of the liquid to the zero mark on the scale the cap should be removed on top of reservoir tube and the liquid poured in, or the liquid should be drawn off at the bottom by a suitable cock placed there for that purpose, as the case may require.



ONE-HALF ACTUAL SIZE.

For automobiles, the scales are graduated to show miles per hour and are of two lengths, 6 in. and 12 in. The shorter scales are used for maximum speeds of either 20, 30 or 40 miles per hour, and the longer scales of 40, 50, 60, or even higher speeds if desired. The scale shown in cut is a 6 in., and will indicate a maximum speed of 30 miles per hour. The pump is driven by suitable gearing either direct from the automobile wheel or from some shaft positively geared on the wheels. The ratio of the gears used depends on the size of the automobile wheel and the scale desired. The indicator is placed in plain sight on the dashboard.

In ordering it is necessary to give make and model car, with diameter or circumference of wheel, including tire; and it is well to send also a sketch of dashboard and a dimension drawing of the axle or knuckle joint, and of the wheel.

The Diesel That Didn't.

Although widely heralded a year or two ago as the successor of the present type of gasolene motor, the Diesel engine has been but little heard of as applied to automobiles.

The Diesel engine works on a most ingenious system, and gives perfect combustion of heavy oils. Instead of consuming oil by mixing with air and then firing it, the Diesel plan is to compress air at great pressure and thus reduce its volume and increase its temperature considerably. A stream of what may be called red hot air is then allowed to pass from the compression apparatus into the combustion chamber, and oil is allowed to spray on this stream. There being a great excess of air, as compared to oil, and the temperature of the air being very high, it follows that every drop of oil is perfectly consumed and gives out its full heat value. The expansive quality of the products of the oil is used to drive the engine and also to work the apparatus for compressing the air. This compressing arrangement would be one of the drawbacks of such a system on a motor car.

To Run Motor Busses in Ohio.

With $25,000 capital, the People's Auto Transit Co. has been incorporated, to run lines of automobile 'buses in Ohio. The corporators are residents of Lorain, Huron and Erie counties, and the purpose of the company is to establish auto car routes through the thickly settled sections not covered by the electric railways. Vermilion will be the main objective point. The cars will somewhat resemble the electric cars, and will in a measure take their place. The routes as laid out extend from Oberlin and other points north to the lake. The company will begin operations this spring.

Pneumatic-Tired Steering Wheels Next?

At the Crystal Palace show, which closed last week, a British concern showed a pneumatic steering wheel. Its periphery is formed of a single-tube pneumatic tire, which can be inflated in the ordinary manner. There can be no doubt that this device will considerably reduce the vibration sometimes felt with many of the rigid wheels usually employed.

To remove tarnish from brass when it will not give way to an ordinary polish take a strong oxalic acid and rub on freely; let it stand for one minute and wash off with water.

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IMPORTANCE OF OILING

"No car Lacking Facilities for Lubrication can be Called Well-Made," Says this Lecturer.

"Lubrication may be described as the art of making things work smoothly. It is a wide term, covering human as well as mechanical relationships, between which there is a close analogy," said Thomas Clarkson in an address delivered before the Automobile Club of Great Britain.

"The necessity of making things work smoothly is apparent to all, and nowhere does this apply with greater force than in the vitals of an automobile, where unsmoothness of working is a sure cause of trouble and expense. The necessity is so vitally important as affecting the life of a motor and its general fitness that no apology is necessary for introducing this subject, which will amply reward careful investigation.

"It is a fair question to ask, Why will not things work smoothly without lubrication? The answer is found in that natural resistance to motion which is commonly called 'friction,' and which it is the object of lubrication to eliminate as far as possible. Friction can never be entirely vanquished; if it could, then perpetual motion would result as a natural consequence, and once the starting inertia of a body has been overcome it would continue to move indefinitely.

"To appreciate lubrication we may with advantage first study the enemy—'friction.' Its laws are few and simple, and may be divided into two classes—static and dynamic. The first deals with the friction of rest, and is given by some the not inappropriate name of 'stiction' (belts and friction clutches come under this heading). The second deals with the friction of motion. It is with this class that we are more particularly concerned.

"The friction of motion may be so subdivided into rolling and sliding friction. The former relates to ball and roller bearings, the latter to plain bearings. In rolling friction the balls or rollers act in a manner closely analogous to the lubricating medium of a plain bearing by keeping the working surfaces apart. If it were possible to make a ball or roller bearing with absolutely no sliding friction the use of a fluid lubricant might be safely dispensed with; but there is sliding between the balls or rollers themselves, or between them and the cage employed to keep them in position. The amount of sliding friction is lessened when intermediate balls or rollers are used; but it is not entirely eliminated. The extra complication and cost of these bearings qualify their other advantages, and the friction of a well designed plain bearing, properly lubricated and protected, is very much smaller than many people imagine.

"The amount of friction between two surfaces sliding together depends upon several things: (1) The pressure applied to them; (2) the material of the surfaces; (3) their smoothness and hardness; (4) their wetness and dryness; (5) their temperature, and (6) the viscosity of the lubricating medium.

"The cause of friction and the reason why two bodies touching each other offer resistance to relative motion appears to be that the touching surfaces interpenetrate and interlock. The extent depends upon the degree of roughness or polish, and upon the facility possessed by one of the substances to mould and adapt its surface to correspond closely to the microscopic configuration of the other. I refer to substances possessing plastic properties, such as leather fibre, rubber and the like. To reduce friction to its lowest degree it is clear that surfaces must be as smooth as possible, and that at least one of them should be capable of the highest polish. The degree of polish depends largely upon the hardness of the substance—hence the suitability of case hardened steel for motion pins and valve mechanism. The surface burnishes like a mirror and gives its mate no chance of becoming too intimate.

"Although the amount of friction is generally stated to be independent of the extent of surface in contact, for practical reasons this old law needs qualification.

"If the surface is large the pressure per unit area is correspondingly small, and may be quite insufficient to squeeze out the film of lubricant—hence the active surfaces are kept at a respectful distance. But with relatively small wearing surfaces, the pressure on the lubricant is proportionately greater. The surfaces possess a more penetrative power, which—if it cannot be checked—will squeeze out the lubricant and permit physical contact. This may become so intimate as to start the force of cohesion, with 'scoring,' or tearing of the surfaces, as an immediate result.

"The principal object of lubrication is to prevent such a result. It must not be expected that lubrication alone, however perfect, will make up for errors of design in making the surfaces too small for the work they have to do; but it is possible for a well lubricated machine of inferior design to do more useful work than an otherwise more perfectly designed machine in which lubrication is defective.

"Indeed, lubrication is of such primary importance that a machine with defective lubrication, however perfect otherwise, cannot be described as well made. This applies with special force to an automobile, and investigation of this point will well repay an intending buyer. So much pleasure is lost, and the depreciation in value of a car is so rapid by imperfect lubrication that the importance of good lubrication cannot be easily overestimated. Another important condition to smoothness of working is to keep out intruders. The lubricant should be clean and free from solid substances. This medium is the only thing that should be permitted to come between the working surfaces. If particles of dust or grit are permitted their smallness of area and consequent penetration enable them to cut through the film of lubricant, to the detriment of the working surfaces; therefore intruders must be kept out.

"Next, as to the means of securing the most reliable lubrication with the smallest attention on the part of the driver. Forms of lubricators (or devices for feeding the lubricant to the working surfaces) are simply innumerable. Much ingenuity has been displayed in their construction, with the object of securing a regular feed and avoiding stoppages, which would speedily have disastrous consequences.

"A lubricator consists of a reservoir and one or more feeders. It may be portable, as in the old fashioned oil can, which is perhaps the most elementary form of lubricator. Usually the lubricator is fixed close to the bearing it is to serve, or, should this be inaccessible, it may be fixed at a distance and a connecting pipe used. The use of an oil can is extremely wasteful in lubricant, and should the interval between successive feedings be too long, permanent injury to the bearing is likely to result.

"The same general conclusion applies to all devices which depend for their action upon human adjustment and attention; and I have no hesitation in affirming that, to expect a driver to regularly fill and periodically inspect and adjust a lot of lubricators in a car is highly unreasonable and foolish. Even with a careful driver some may be overlooked—or in the act of filling foreign substances may get in—besides, the filling operation is messy and disagreeable, and, therefore, likely to be postponed unduly. In preparing a car for service attention to lubricators forms no small part; and could this be entirely done away with the time would be shortened and the pleasure of automobiling greatly enhanced."

Paris Ragpickers Protest.

Parisian ragpickers and scavengers are up in arms at the proposal to introduce automobile garbage wagogne. The Paris Municipal Council has formed a committee which is to study the project of introducing the automobile principle in the street cleaning and scavenger service.

M. Paulmier the doyen of the ragpickers, in an interview, spoke as follows on the alleged insalubrity of the business and of the proposed reforms, which, to his way of thinking, can only be intrusions: "It is asserted that our business is unhealthy. They talk of microbes, but the microbe does not exist in our field of labor. For us the greatest malady, that which may cause our death, 'c'est les riches,' who are talking of marvellous machines, all these monopolists who want to take our bread from us."

Moses Fifield has been elected assistant secretary of the Rhode Island Automobile Club. He succeeds B. S. Clark, who resigned.

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WHAT ARE "MODERATE MEANS?"

Matter of Motor Costs Calls up the Question—Figures That Proved Misleading.

What is a "man of moderate means"? That question is exciting lively discussion in England, and all because an autoist recently read a paper on the above subject before the Automobile Club of Great Britain. By inference he designated himself as a man of moderate means. When he presented a detailed statement showing that his car, with accessories, cost nearly $3,000, and that he had spent nearly $1,500 additional to keep it in commission, it will be seen why there should be such a how-de-do about it.

The car was a 10 horsepower gasolene touring car, and was used pretty constantly. In nine months it covered 6,600 miles, this distance being made up of long and short journeys in town and country over every description of road to be met with in Great Britain, its owner, Captain Kennett Campbell, using it for all purposes.

The various items that go to make up the totals are interesting at least. The car and extras, for example, come out as follows:

	£	s.	d.
Price of car	525	0	0
Extras, carriage rugs, etc.	26	15	2
Tips, etc., and learning to drive	3	17	5
Delivery of car from makers	3	18	10
Total	£559	11	5

The "running expenses" are figured as follows:

	£	s.	d.
Gasolene. This works out at about ¾d. a mile, but it should not be forgotten that there is a considerable amount of waste in gasolene in using the car for town work.	21	15	8
Lubricants	6	16	7
Maps	0	5	0
Sundries	9	17	2
Repairs to car body, frame and engine. (This works out at about 2½d. a mile, and includes accidents, which resulted in two bent axles—one due to a sideslip and the other to running into a ditch to avoid a collision. The side of the car was also kicked through by a horse, the owner of which compromised by paying half the damage done.)	67	0	5
Tires, including four new tire covers, one new inner tube and two old tires with "treads"; or 1¾d. a mile	48	6	0
Making a total of (for running expenses of all kinds for nine months, or, at the same rate, £205 7c. 8d. per annuam; for the 6,600 miles' run it comes to 5½d. per mile	£154	0	10

The cost of motor, groom and coachhouse per annum is as follows:

	£	s.	d.
Wages of motor groom at 25s. a week	65	0	0
Livery, clothes and boots	20	7	3
License for groom	0	15	0
License for motor car	2	2	0
Rent of stables	30	0	0
Taxes on stables	8	17	4
Light, say	1	0	0
Water	1	12	4
Christmas present	0	10	0
Total	£130	3	11

The grand total, therefore, is £483 15s, 2d., or $4,219.

It is small wonder that other men of "moderate means" take up the cudgels in behalf of the car and contend that Captain Campbell is not one of them. An autoist, they contend, may spend a great deal more money than this on a car in a year or he may spend very much less. Summing up the matter, the Autocar says:

"At the present moment it is most difficult, of course, to arrive at the actual cost of automobilism per mile, when depreciation is taken into consideration. But if the man of moderate means is content to buy a comparatively reasonably priced car and to go about all other matters of expense in a manner which characterize him, we are inclined to the opinion that within a margin of, say, from 4,000 to 5,000 miles per annum—which, assuming the man of moderate means to be engaged in business day by day, is about all he will find time to cover—his running expenses, including insurance, should not cost him at the outside more than from 1¼d. to 1½d. per mile. As Captain Kenneth Campbell's paper was given under what he himself suggested was a misleading title, we would welcome correspondence upon the alleged subject of his discourse, viz., 'Autocars for Men of Really Moderate Means.' A man who, altogether outside cost and loss on his car can afford to pay £284 4c 9d. for his annual automobilism, does not appeal to many people as "a man of really moderate means."

That Road Across the Meadows.

That much talked of project, an automobile road across the meadows between Jersey City and Newark, N. J., is up again. It is planned to purchase of the Belleville turnpike, between Jersey City and Kearny, for an automobile driveway. Hudson County owns the turnpike, and the automobilists will first endeavor to secure it as private property. Failing in this, they will open negotiations with the Freeholders and the New Jersey State Road Commissioner.

The promoters of the scheme are mainly residents of Newark, Montclair, Bloomfield and adjoining towns, who have business interests in Manhattan. As a highway to New York the Belleville turnpike is over two miles shorter for residents of Newark, Montclair and Bloomfield than the Newark turnpike.

The Belleville turnpike is four miles in length and is used almost entirely by funeral processions from Jersey City to Arlington Cemetery. It is understood a definite proposition will be submitted to the Hudson County Freeholders at their meeting on Thursday, March 5.

THEY ROPE THE TIRES

How the New York Motor Cab Drivers Get About When Horses Slip and Slide.

"It does not take long for the average cabby to learn how to cope with a sudden emergency," remarked an observant autoist to the Motor World man on Tuesday. "On such a day as this, with a heavy fall of snow on a foundation of ice and sleet, the cabby is likely to have an interesting time of it, and that whether he drives a horse cab or a motor driven one. The horses were quite helpless. At noon on lower Broadway there was a mass of trolley cars, horse vehicles of all kinds and a few motor vehicles, so hopelessly mixed up that the stalwart policemen were at their wits end to disentangle it and keep things moving in some sort of fashion.

"Naturally the motor vehicle would have suffered, too, for when the power was applied to the rear wheels the latter would revolve without gripping the ice and snow covered surface. But the first cab I saw was gliding along as smoothly as you please and as rapidly as the traffic would permit.

Getting close to it, I discovered the reason. On each rear wheel was a coil of rope about three-quarters of an inch in diameter wrapped around the tire and rim twice and then knotted loosely. Its movement was checked by the spokes, between which it was fastened, but it was purposely left loose, so that it could move.

"Apparently that was what made the vehicle grip, and each cabby seemed to be in the secret, for each cab I saw—and I began to notice them—had the same arrangement.

"Seemingly, too, the fitting of these 'non-slippers' was done by the cabby, for all kinds and sizes of rope were used. Sometimes it was new, at others old and ragged. Evidently it had been procured haphazardly, the cabbies borrowing or buying it, as necessity compelled.

"The thing did not improve the looks of the vehicle, but it did the business, and that was what was wanted. No, there is nothing new about it, but the practical unanimity of its adoption caught my fancy."

Eschew Rubber Tubing.

Never use rubber tubing for gasolene connections, because (1) gasolene is a solvent of rubber, consequently it will become contaminated by the dissolved material; (2) gasolene will percolate through the rubber, causing much waste and a possible danger from fire; (3) small particles of rubber may become detached from the tube and be swept into the carburetter, where, sooner or later, the symptoms of a choked spray will develop.

A periodical inspection of the bolts securing the tire to the rim must be made if serious trouble is to be avoided. Creeping will inevitably set in if these bolts are not kept tight, and the first indication of it will be a valve stem sheered off.

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SUPERSEDES LOCOMOTIVES

"Autonobiles" for French Railways—Saves 110 Tons Weight and Avoids Smoke, Noise, etc.

June next is the time set for the inauguration of the new "autonomobile" service on French railways. On the 18th of that month there will start from the Lyons station, in Paris, a train composed of three "autonomobile" carriages—that is to say, carriages that are both autonomous and motor cars—which will enter the Dijon station at noon. The 315 kilometres (195 miles) between Paris and Dijon will thus have been covered in three hours and ten minutes, or at a normal speed of 100 kilometres (62 miles) an hour; and the same speed may be maintained between Dijon and Lyons, Lyons and Marseilles, Marseilles and Nice, and Calais and Paris uninterruptedly, so that the distance between Calais and Nice can be covered in fourteen hours.

This invention is now neither a project nor an experiment, but exists and works, and its application is merely postponed for some months for the construction of the actual rolling stock.

As its name indicates, the autonomobile supersedes the locomotive—that is, it dispenses in every train, short or long, slow or fast, with a weight of 110 tons. It saves the considerable cost of locomotives. It abolishes smoke, steam, noise, vibration, the jolt incidental to stopping and starting, and the necessity of stopping to take up water. It also abolishes all the men in charge of a locomotive except the engine driver. The new carriage is 17 metres (56 feet) long—that is to say, the length of the present French corridor carriage. Of these 17 metres a space of 2.6 metres (8.5 feet) in front is occupied by the traction apparatus, while the remaining 14.4 metres (47.5 feet) will comfortably accommodate forty passengers and the 1,200 kilogrammes (2,645 pounds) of luggage allowed them. The cost of the autonomobile is the same as that of the first class corridor carriage, while the weight, including the traction apparatus, is also the same. Thus the abolition of the locomotive is an accomplished fact, and the rails which now have to bear the weight of the locomotive and tender, as well as of the carriages, are relieved therefrom, is the conclusion of the London Times, from which this description is summarized.

The system is one which, in an embryo form and dating back several years, has been applied to short and fast tramway lines, but never to practically unlimited distances.

Briefly, in front of every autonomobile is an apparatus producing with a liter of petroleum per kilometre (1.05 quarts per 0.62 mile) the steam power requisite for propelling the carriage with its forty passengers and 1,200 kilogrammes of luggage at a normal and almost minimum speed of 100 kilometres (62 miles) an hour, and that, too, without interruption, noise or jerk. In order to overcome the air resistance which such a speed entails the autonomobile in front and behind is so shaped as to cut the air, which thus becomes an auxiliary rather than an obstacle. As each autonomobile has its own apparatus, the carriages, of course, might go singly as easily as when coupled together. It is said that the weight of the apparatus, apart from the petroleum and water carried, is trivial. As to the latter, to go from Paris to Nice 1,100 or 1,200 kilogrammes (290.5 or 317 gallons) of petroleum and 4,000 or 5,000 kilogrammes (1,056 or 1,321 gallons) of water will be required. This will allow of the whole journey being made without a stop; only care must be taken to guard against overheating.

Sound Sense From Connecticut.

"The automobile drivers are now running up against the same kind of legislation as was met by bicycle riders when that vehicle was first introduced. There are many conservative people who would always see things done in the same old way and who, when anything new is introduced, resent the intrusion and fly to the legislature for all sorts of restrictions to protect themselves," says the Manchester (Conn.) Herald.

"The fact is the progressive men who rode bicycles when they first came out, and who are riding in automobiles to-day, are just as good citizens as their fathers who rode inrockaway carriages. They have no more desire to cause injury to life and property than their critics. The number of bicycles used now far exceeds the number of all other kinds of vehicles put together, yet bicycle accidents are comparatively rare. This immunity from accident is not caused by laws regulating the speed of bicycles or requiring the use of bells and lanterns; but it is due to the fact that all concerned have become accustomed to the new vehicle and have adjusted themselves to the conditions of its use.

"The automobile, like the bicycle, is bound to become a popular vehicle, and no laws which may be passed now will prevent the public from availing itself of the economy and speed as well as other advantages possessed by the automobile. In due time the automobile as well as the bicycle will find its place and will be accepted as a matter of course."

One Look Sufficient!

"Automobiling this year will be very popular. For instance, one look at the machinery will give any one an idea how the machine works, and it will take scarcely any time to master the works," sapiently remarks the Buffalo News.

"Things have been reduced to their simplest form, and any one who has his nerve with him can become an expert chauffeur. All one wants is confidence in his own ability to control the machine. The great mistake many people make is that they change their minds too often."

PREVENTS TIRE NIPPING

Device Employed by an Automobilist to Overcome the Evil and how it Works.

From the time the first pneumatic tire came out of Ireland there has been more or less trouble with "nipping" or pinching the air tube between the road and the wheel rim. At one time cyclists used to cover their rims with felt strips in the endeavor to prevent "nipping." An English autoist has had recourse to a somewhat similar method, and with complete success.

"The plan works most admirably, and after various experiments I can give the most satisfactory width of felt for 80 millimetre tires," he says. "The felt for this size should be just two inches wide, and long enough to encircle the rim of the wheel and lap over for two inches. This felt must be at least a quarter of an inch in thickness, and must be very close and stiff. It should be treated with three heavy coats of solution on one side and a two inch strip of canvas put on this. When dry this canvas must be solutioned with three or four coats for about three-quarters of an inch on the reverse side, and the fixed edge of the cover similarly treated. The canvas must then be pressed into position all round this and allowed to dry thoroughly. When this has been done, the ends of the felt strip can be sewn together so that it forms an endless band. When the cover is in place, and one side only detached, the felt flap will stretch across the felloe and rest over the edge of the latter. The air tube is then put into place, a hole having been cut in the felt to permit the valve to pass through, and the loose edge of the cover slipped under the felt and canvas, which will thus raise the tube into position and form a bridge across the bottom of the cover on which the tube can rest. The wing nuts and bolts which prevent the cover creeping are, of course, under the felt.

"The result is that the tire can be put on in half the time, and the air tube cannot be nipped either then or by the action of the movement of the cover. Furthermore, in the event of a puncture the canvas and felt will protect the air tube for a few yards while the car is stopped, and it must be remembered that a short distance with an unprotected tube may mean a great deal of damage."

Increasing In Knoxville.

One year ago there were but four automobiles in Knoxville, Tenn., to-day there are ten, and it is estimated that before the end of the present year there will be between twenty-five and fifty in use. So keen is the interest displayed that an automobile club is talked of, and will probably be organized within a few weeks. Cowan Rodgers is the moving spirit in the project.

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AT SIXTY PER HOUR

Sensations of one who was Given an Unexpected "Treat" and why he did not Enjoy it.

Did you ever experience the sensation of travelling in an automobile at a mile a minute gait?

Did you ever after a Welsh rarebit or something equally indigestible experience the sensation of falling into space with the accompanying dread of the shock of landing?

The two are somewhat akin, as a couple of Motor World men can testify. Not that they sought the experience. Quite the contrary. Like the adage regarding greatness, it was thrust upon them.

It all happened this way: They were out at a certain factory in Cleveland examining a new and much talked of car recently built for record breaking, and with which it is hoped to capture the Gordon-Bennett Cup, when its builder and driver volunteered to take them downtown. For several reasons, some of them obvious, it is best that names be not mentioned.

They accepted the invitation with alacrity, supposing, of course, that the driver would not dream of "letting it out" within the city limits. The factory in question is located away on the outskirts and just beyond some railroad tracks. From the tracks an asphalted street fully a mile long stretches invitingly into the distance. The giant motor was started, one of the Motor World men jumped up beside the driver while the other curled up behind, hanging on to the back of the seat. In a moment the clutch was thrown in, the machine fairly bounded over the tracks, and before even a coat could be buttoned or a hat pulled down tight the great car was plunging into space. A dull roar like a tornado, a sudden catching of the breath, then water fairly running down the cheeks in a half blinding way, a confused shooting past of houses, trees and open lots; then a grinding, tearing sound, and a slow-up to round a corner gave a chance for breathing and for protest. The only answer was a chuckle, and in response to the query as to how fast we had been travelling a careless, "Oh, a little over sixty, that's all."

"Well, for heaven sake don't try it again," only brought another chuckle and a grin.

A moment later and he was at it again; this time the passengers huddled up close and held on for dear life, but it didn't seem quite so bad or goose flesh raising.

Suddenly a coal cart, which had leisurely been crawling along far ahead, suddenly loomed ahead and turned directly across the street. There didn't even seem time enough to jump, when the little finger at the wheel seemed to act automatically, the big levers were reversed, and the brake was on quick as a flash and before the brain had time to think. The big machine came to an almost sudden stop, yet without any shock, and just missed the car by an inch or so. This performance was nearly productive of a hemorrhage to the man sitting in front, yet he could not but admire the supreme skill and nerve of the driver beside him. The latter took the incident as a matter of course, and when queried regarding his instantaneous action replied with superb sang froid, "Oh, it's more a matter of experience than anything else. The man accustomed to travelling at great speed gets in the habit of acting intuitively. He has to, for he hasn't time to think."

But the streetcars or an ordinary automobile will probably carry the guest back to town from that particular factory in the future. It may take more time, but it will be cheerfully given. And yet the experience would not have been missed. At least one of the men feels much the same as he did after going through for the first time the Cave of the Winds under Niagara Falls: Wouldn't have missed it for the world, but would not go through it again for the universe.

It all seemed daredevilish, but reckless, subject to severe censure and all that, yet it is of such nerve and control that will enable this country to dim the lustre of the Fourniers and the Old World's greatest cracks as much as anything else.

Why he Favors one Brake.

"Two brakes are better than one, they tell me, and I have no doubt that it is true. But for my part I'll take one brake that I know is all right in preference to two that are doubtful," remarked the autoist to the Motor World man.

"Perhaps I have been unfortunate with cars having two brakes, and just the reverse with the one brake kind. Any how, I have always found that with the latter I keep the brake in perfect order, ready to bring the car to a stop whenever I jammed the brake on hard. I always knew what to expect, and never did it disappoint me. But with two brakes I was always having narrow escapes. The brake I used regularly might become worn a little and need adjusting. 'Next time I will fix that,' I would say to myself, and then put it off to a more convenient season, always reflecting that I had the emergency brake to fall back on. Then if I did have to make use of the latter it was never just right. Disuse interferes with efficiency, and the only way I have ever got service out of an auxiliary brake was to make use of it at regular intervals.

"Two brakes are all right if they are used constantly, but otherwise they are apt to prove a delusion and a snare."

Sold his Order for $2,000.

An Irish autoist, Dr. Colahan, of Dublin, has made a nice "bit" out of a Mercedes racing car which he had on order. The latter was placed last year, and a short time ago he was offered $2,000 premium for his bargain. He accordingly turned it over to the bidder, thus undergoing disappointment, but pocketing this nice little sum.

WASHING THE CAR

Why Soapy and hot Water Should be Firmly Tabooed—Care Necessary in Other Respects.

There are many men who, though good mechanics, have no idea as to the care required in washing a carriage body. Carriage varnish is a very delicate substance, and should be treated with extreme care. It is not generally known that it is susceptible to light and heat, both of which have a softening and dulling effect upon its surface. It should be carefully noted, therefore, that the house in which the car is stored is not subject to any strong rays of light striking through its windows directly on to the carriage. The house should also be dry and well ventilated. In any case, it is always best to keep the car covered with a large sheet when it is stabled.

A newly varnished car should stand for at least a week before being taken into regular use. This is in order to allow the varnish to set properly. Frequent washing with clean cold water and careful drying with chamois leather and exposure to fresh air in the shade will both harden and brighten the finish. On no account allow mud to remain long enough upon a newly varnished carriage to dry. If this is done stains are bound to follow, and when once they have set into the varnish nothing will remove them.

In washing a carriage plenty of water should be poured carefully over the parts; it is always a mistake to use a swift flowing hose jet. It is really better to use a large sponge, well saturating it and squeezing it over the panels of the car body, when the water in running off will carry the mud with it. Never allow water to dry on the carriage, as this is very liable to stain, almost as much so as mud. Hot water and soap should never be applied to any varnished or light colored painted surfaces.

Water in the Carburetter.

When the spray chamber of a carburetter is opened droplets of water are often found adherent to its walls. This frequently causes needless mental perturbation to the novice, for water in the carburetter is usually held up to him as one of the bogies of the motorist, and that it is so is true enough, but only if the water is present in the spray chamber in considerable quantity, or in the float chamber, and has free access to the spraying nozzle, which it may block. The vaporization of gasolene in the spray chamber produces a very low temperature, and the presence of water (which should be periodically soaked up with blotting paper) is due to condensation of moisture from the air drawn in. This has no appreciable effect on the running of the motor, unless allowed to accumulate for some time.

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ABOUT BATTERIES

The Lechanche as an Illustration—Its Components and how They Act.

The battery, which is most familiar to the non-technical public, is the "Leclanche," such as is used for electric bell work. This battery is a recuperative one, and may run without attention for months, though if its circuit be closed for a length of time it will polarize or cease to give current until a further rest is allowed, when it will be restored to something like its original energy.

In the "Leclanche" cell the element is a zinc rod, the exciting fluid a solution (semi-saturated) of sal ammoniac, and the depolarizer oxide of manganese. The construction is an outer glass jar containing the liquid, the zinc rod and the porous pot in the centre. The porous pot, as its name implies, is a vessel through which water percolates slowly; in the centre of the porous pot is a carbon rod forming the positive plate of the cell, and around this carbon rod is packed crushed carbon and oxide of manganese, the whole being sealed up with pitch. In action the sal ammoniac attacks the zinc rod, the current flows through the liquid and the porous pot, and is drawn off at the carbon terminal.

When the circuit is closed for a length of time the current becomes feeble through certain chemical changes taking place; on opening the circuit current ceases to flow, and the oxide of manganese restores the original condition. This action of the battery continues until one or other of the component substances run out, usually the manganese or the sal ammoniac, or, if in a warm place, the water, by evaporation, so that to restore the action the missing substance must be added.

Each "Leclanche" cell, when new, gives a little over two volts, and quantity according to size of cell, and it may be noted that, no matter what the size of any particular form of cell may be, its voltage will be the same, thus, a quart cell, and another the size of a thimble, would each give the same pressure, but the quantity of current would be entirely dependent on the size of the cell, or, rather, the size of the elements and quantity of other contents; thus, for motor work, where it is necessary to make all as compact as possible, the cell is usually square, and contains the maximum quantity of each ingredient in the form of a dry cell. The ordinary "Leclanche" described is unsuitable, on account not only of the water splashing about, but by reason of its extra weight and bulk as compared with the dry cell, which, however, is merely a modification of the wet cell.

In the dry cell a cylinder of zinc is used, thus exposing a far larger surface of zinc and giving a correspondingly heavier current. The zinc cylinder is surrounded by plaster of paris and sal ammoniac, and the depolarizer is crushed carbon and manganese, as in the wet cell. Size for size of outer dimensions of cell much heavier currents may be drawn from the dry cell, and for longer periods on closed circuits, but the total depreciation is more rapid, and the renewal of any individual constituent impracticable.

Justice in Far Away Ceylon.

There's no nonsense about a certain Ceylon official who was called on to pass on the automobile versus the horse. It appears that at Colombo the driver of a steam vehicle was "summoned" for frightening a horse by the emission of steam, and the Commissioner of Requests in the course of his judgment said:

"Horsed carriages have no greater right to the use of public roads than motor cars have, and it is not inconceivable that at some distant date they will be as extinct as sedan chairs are now. The discharge of steam when a certain pressure is reached is automatic and beyond the control of the defendant. The defendant in this case, so far from displaying negligence, seems to have exercised particular care, for he stopped the car when he saw that the plaintiff's horse was getting frightened, and when the accident occurred the motor car was stationary.

"I see no more reason why he should be mulcted in damages than why the first man who used an umbrella in London should have been assaulted by the mob, as he was. The defendant was driving a legitimate vehicle in a legitimate way, and I cannot, from my point of view, hold him legally responsible for this accident."

"Justice" in Maine, U. S. A.

"It would seem from the verdict given on Saturday last in the automobile case that a man driving an automobile has no apparent rights on our public streets," writes H. M. Jones, of Portland, Me., to the Press of that city,

"A man may be a taxpayer and pay for street privileges, and while enjoying these rights in an automobile he drives into the gutter to let a horse pass that is going ten or eleven miles an hour; the horse bolts, smashes the team, and the automobile driver is, according to the above verdict, held responsible for damages. The person owning the horse is allowed to drive in the streets, and with such an animal can go to the Western Promenade and in company with others race back and forth to the danger of those who are out for a pleasure drive, and nothing is said.

"I am not protesting against the horse racing, as I believe that those who enjoy the sport should have the privilege of so doing; at the same time I do not think it just that a person should have the right to charge the damages caused by a dangerous horse to those who enjoy another kind of riding, and who take precaution against frightening horses or those driving them."

INDUCTION COILS

Some of the Conditions That Make for Proper Sparking—As to Plugs.

The successful action of the induction coil and its trembler depends largely on a rapid break, and tremblers on the principle of the Charpentier are being widely adopted. The principle of all these lies in mounting the armature that is attracted by the core of the coil on a weak spring, while the contact points are on another spring separate from the former. The armature, on being attracted, does not touch this latter till it has partially completed its travel, and so is already moving fast. Thus a more rapid break and more powerful spark is obtained. In the Eiseman system a magneto generator is substituted for the acumulators, the current being sent in the ordinary way through a coil.

It was not, however, necessary to have a coil, or rather the secondary winding, as on breaking the primary circuit a high-tension current was induced in it. To utilize the spark from this, however, the break had to take place in the cylinder itself, and this is the principle of the magneto ignitious, most widely known and used. In the reciprocating form of this a coil of wire is alternately screened and exposed to the magnetic flux of a powerful pair of magnets by an oscillating screen of soft iron. The break in the cylinder is adjusted to take place as the screen begins to uncover the coil, the result being a powerful and efficient spark. With regard to sparking plugs, a broad surface of insulation inside, whether obtained by grooving the porcelain or otherwise, diminishes trouble from fouling. Sparking across the outside surface, sometimes troublesome in damp weather, may be cured by the application of vaseline.

One Cause of Poor Compression.

After grinding in the exhaust valve the compression is sometimes unaccountably poor. This may be due to uneven grinding, so that part of the valve does not fit closely to the seating. To test this smear the seating with a tin film of oil colored with red lead and place the valve gently in position. Now remove the valve, and notice whether the colored oil is uniformly distributed round it. If any part is left uncovered this indicates the badly fitting portion, where the leak of compression takes place. The valve must then be reground, the operator's pressure being so distributed as to remedy the defect.

The Week's Exports.

Cuba—2 cases motor vehicle material, $18.

Colombia—1 case motor vehicles and material, $148.

Hamburg—4 cases motor machinery, $800.

Havre—1 case motor vehicles, $165.

Liverpool—4 cases motor vehicles, $5,500.

London—23 cases motor vehicles and material, $19,134.

Mexico—1 case motor vehicles, $1,000.

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ELECTRICAL ECCENTRICITIES

Some Observations Growing out of the Recent Sparking Discovery Abroad.

"The discovery made by Messrs. Panhard and Levassor illustrate very strikingly the behavior of electrical discharges such as occur between the terminals of a secondary coil, between the coatings of a Leyden jar or in a lightning discharge, and the explanation of the action is a very simple one," says a correspondent of the Autocar.

"It should be remembered that the discharges from a secondary coil, or from a Leyden jar or other condenser, are not the same as the usual form of electric current such as we use in our incandescent lamps, motors, etc. When we allow a spark to pass across the terminals of a secondary coil we see apparently only a single discharge, a flash, larger or smaller, according to the amount of energy passing, and that is all; and we are apt to imagine that what we have seen is simply a form of current and nothing more. Really, it is a succession of waves giving rise to a succession of other waves in the ether, the sets of waves passing alternately in opposite directions.

The discharge is oscillating—that is to say, there is a discharge in one direction followed by a counter discharge or recharge—a surge backward, in the opposite direction, followed again by a discharge in the first direction, and so on, till the whole of the energy available for the discharge has been dissipated. The action is, in fact, similar to that of a pendulum, which, when set in motion in one direction, swings back to the point from which it started, then moves to a certain height in the opposite direction, returns to the vertical position, then moves to a certain height in the first direction, returns to the vertical again, and so on.

"As is well known, if allowed to do so, the pendulum gradually comes to rest, each swing in each direction being over a smaller arc than the previous one. We know also that the reason the pendulum swings over past the vertical to a position on the opposite side is because of the momentum acquired in falling from the position to which it was first propelled. We know also that if, instead of allowing the pendulum to come to rest, we give it a second impulse at a certain point of its swing, in the same direction as the first, or in the direction in which it is going at the moment, its swing may be increased and the motion may be maintained for a much longer time than would have been the case if no second impulse had been given it. In fact, as our clocks tell us, the motion may be maintained indefinitely, provided that a succession of impulses are imparted at the right moment.

"Also we know that if, instead of imparting the second impulse at the right moment, when it accelerates the motion of the pendulum, we impart it against the direction in which it is moving, the second impulse tends to bring the pendulum to rest sooner than would have been the case if left to itself. The opposing force of the second impulse uses up some of the momentum acquired in falling—provides negative acceleration, in fact. The same thing takes place with electrical discharges from condensers. If there are two discharges or similar actions taking place in the same circuit, as in the case of the secondary coil if the two discharges are in unison, in time, the oscillations are added together just as the impulses imparted to the pendulum are, with the result that a much higher pressure is reached, and discharges may take place over a space that would not have been possible with only the one discharge in the circuit.

"It will have been noticed from the experiments that a certain length of spark in the additional spark was necessary or the result was not obtained. This means that it is necessary to have the sparks—the waves which form the discharge—in unison, assisting each other, not retarding. The waves forming the second spark must not be passing in the opposite direction to those of the first spark or damping will result; and this method is employed in some cases in electrical work where damping is desirable. It is possible, of course, that the waves of the two sparks may not travel the whole distance together, but the amount of opposition must be so small as not seriously to reduce the total acceleration."

Why Pneumatic Tires.

In their report on the tire trials held last September, the judges of the Automobile Club of Great Britain summed up the respective merits of pneumatic and solid tires. "It is claimed for the pneumatic tire that by its great resiliency and consequent reduction of vibration, the engine, gear and carriage work are preserved from the constant succession of shocks from road contact which must arise from speedy travelling over the highway; and that consequently cars shod with pneumatic tires are not so liable to breakdown from engine, gear, or frame failure, and the life of a motor and carriage is considerably prolonged, while the comfort of riding and facility of steering are greatly increased," they say.

"It is beyond argument that the reason why motor owners incur the very considerable additional expense which is involved by the employment of pneumatic in preference to solid tires, and are willing to suffer the delays and annoyance which may arise from puncture of pneumatic tires, is because of the additional speed and general smoothness of running which result from the property of absorbing obstacles, which is the main characteristic of a pneumatic tire. It is possible to manufacture a pneumatic tire which is practically unpuncturable; but if, in order to avoid puncture, the tread and walls of the tire are so thick and so unyielding, and therefore sluggish, that the tire fails to absorb concussion better than the solid rubber tire, nothing is gained by the use of such semi-solid tires."

MALTA AS A MARKET

Opportunities that Exist, Motor Wagons Being Among Those Wanted—Influence of Catalogs.

"There are already several automobiles in use, and correspondence is now being carried on between probable purchasers and American makers," writes Consul Grant from Valletta, Island of Malta. "One gentleman recently went to England and, after looking at the various makes of machines there, ordered one of American origin, which is giving good satisfaction. This machine is of the steam variety, being the only one of its kind here. The others are operated by gasolene. One firm desires to secure large vans for delivery of goods. No fault is found with gasolene machines except that it is somewhat difficult at times to procure gasolene, on account of local laws. It is imported from New York and other places, but the supply is apt to be limited.

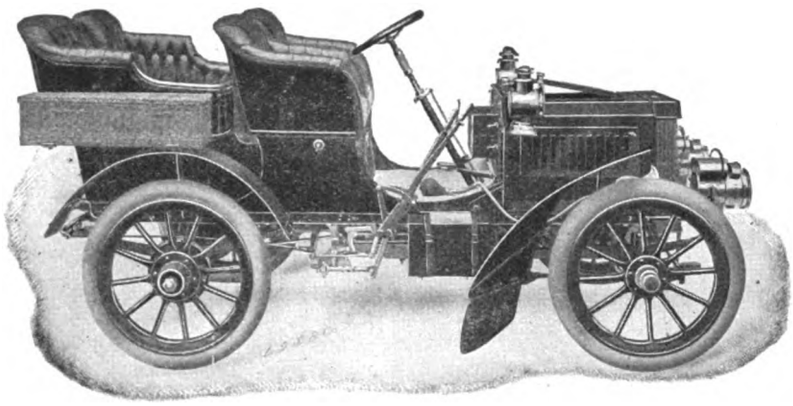
"American manufacturers of automobiles should bear in mind that Malta does not possess, as a rule, long, level stretches of road. There are many steep hills—some of them having a grade of 1 in 9. The machine should be much more powerful than is the rule in the United States. Another thing to be remembered is that, in giving price, the manufacturer must quote f. o. b. New York; otherwise the inquirer will not know what his machine is going to cost him. Peole here know nothing about distances or freight rates between ports of shipment and our interior cities. Several negotiations have failed because the dealer in the United States insisted upon quoting prices f. o. b. Chicago or other place of export. When possible, it is even better to give prices c. i. f. Malta. In other words, when the buyer at Malta writes for terms, he should be given information which wil enable him to figure exactly what the machine will cost him, landed here. If information as to the cubic measurement of the machine as crated or boxed for shipment can be given, it will add to the satisfaction of the buyer.

"Some time ago an American carriage manufactured in one of our interior cities was sold here, and, to my own knowledge, one of the greatest points considered was the completeness of the information given in the catalogue. I provided other catalogues, which were prepared in attractive style and showed desirable goods, but information as to terms, etc., was very meager and they were not considered. It must be remembered that transportation from New York to Malta is now ample by way of a direct line of steamers.

"My assortment of automobile catalogues is somewhat limited, and I should be pleased to receive such as manufacturers may see fit to send me."

The Goodyear Tire & Rubber Co., Ltd., has been registered in Great Britain. Its capital is $25,000.

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Style "F." Type 6.

The Peerless Motor Car Co. were the first American manufacturers to adopt the Vertical Motor, mounted in front. One year hence all makers will follow their lead.

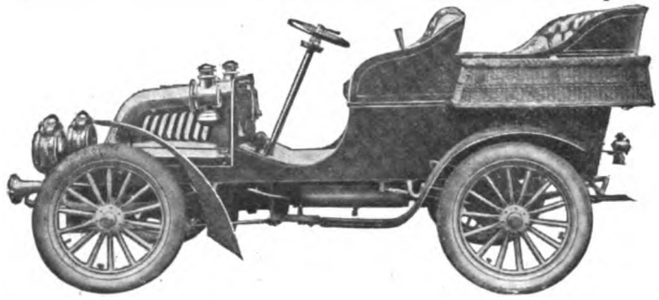
THE PEERLESS MOTOR CAR CO., Cleveland, Ohio

BUILT FOR AMERICAN ROADS.

The U. S. LONG DISTANCE TOURING CARS

Are Preeminent for Speed. Safety, Reliability and Economy.

Our book is of unusual interest to Automobilists. Sent free on request.



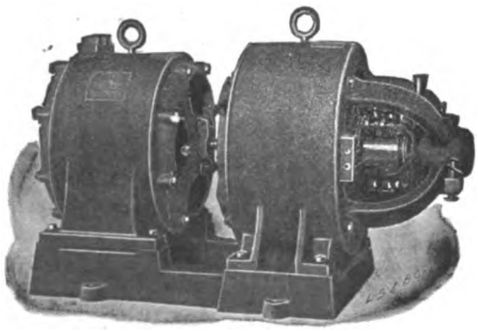
TYPE C—TONNEAU. Two Cylinders. Vertical Engine.

Built for service, long runs and hill climbing, simply operated, free from vibration, each part easily reached, no intricate machinery to get out of order.

Type A—Runabout, $1,250.
Tyye B—Tonneau, 1,500.
Type C—Tonneau, 2,500.

U. S. LONG DISTANCE AUTOMOBILE CO.,

Factory, 307 Whiton Street, Jersey City, 110-114 West 41st Street, New York.



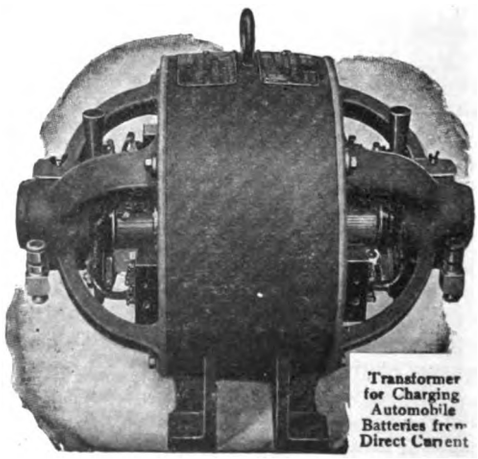
Convertor for Charging Automobile Batteries from Alternating Current.

WE ARE MANUFACTURERS OF THE

Standard Electric Motors

THAT ARE NOW USED ON ALL THE MOST SUCCESSFUL ELECTRIC AUTOMOBILES in the country.

Our machine is the **MOST EFFICIENT and PRACTICAL OF THEM ALL**—as demonstrated by hundreds of them in daily use all over the country.



Transformer for Charging Automobile Batteries from Direct Current

THE ELWELL-PARKER ELECTRIC CO.,

CLEVELAND, OHIO.

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THE CHAUFFEUR'S STORY

What it Means to Operate a Car in a Big City —Parts the Police Play.

Some people think it a cinch to operate an automobile in the city," remarked the chauffeur plaintively, "and others don't give a fellow credit for doing anything except when he runs down somebody. Then he gets it in the neck and everywhere else. Probably the life of a chauffeur isn't quite what it's cracked up to be. Certainly I don't think so after trying it for one summer and winter. I used to be a driver on one of the old horse cars that ran up the Boulevard before they tore the subway up; then I took a job as motorman on the Third avenue line, and I would have been there to-day if it hadn't been for these automobiles. When they came along I thought I could better myself, and I took lessons in running them, and here I am getting my $60 a month and board. It seemed like a cinch at first to me, but that was before I knew.

"When anybody tells you it's fun to make a living doing this sort of work put him down for a greenhorn. What with the cops watching your speed, and the mobs of kids ready to besiege you if you touch one of their number, or run too close to some old woman who can't see or hear, and the magistrate ready to fine you for doing nothing wrong, life isn't as pleasant as it might be. I was nearly mobbed on the East Side the other day just because I ran close to a kid who jumped from the curb right in front of me. The crowd that got around me said that I was running at a reckless speed, and they looked as if they wanted to lynch me. For once the policemen were my good friends, and they rescued me, driving the mob back with their clubs.

"Do you know, it's as much as a chauffeur's life is worth to go down some of the East Side streets? If you go slow the kids pile on the automobile from behind, and if any one tumbles off you are blamed for it. If you run fast to get away from them somebody starts up a cry that you are running faster than the law allows. Then at the corner a cop will nab you, and up you go. Now, what is a man going to do in such a case? My plan is to keep away from the East Side, where an automobile is looked upon as some sort of a thing to stone and kill as soon as it appears. As luck would have it, I don't have to go over there very often, and so I'm relieved of that terror.

"But there are other things pretty nearly as bad. In Central Park and Riverside Drive every policeman—mounted, bicycle and foot cop—is the declared enemy of the chauffeur. Why this is so I can't tell. I suppose it's because some reckless fellow does once in a while run up against it and forgets to shut off his speed in time. Just now there is so much feeling against automobiles that every policeman considers it his duty to arrest one to keep popular with headquarters. There isn't anything easier to make out that you are doing something than to arrest a chauffeur and charge him with running his machine at too great a speed. How can the policeman tell how fast the machine is running? He must guess at it, and there isn't any proof, and so the judge accepts the cop's story and turns down the chauffeur's. I hope they'll soon invent something to put in the automobile which will indicate the speed one is travelling at, and then when the smart cop comes along and arrests you he'll be shown up in fine style.

"Well, as I was saying, it is hardly safe to run faster than five miles an hour in Central Park or Riverside. That's about the limit. If you go much beyond that somebody will say you were travelling at fifteen or twenty miles an hour. I was only arrested once for fast speeding, and then I wasn't going more than ten miles an hour. When the cop took me up I asked him if he knew how fast I was going. He said he did, but I knew better. Then I asked him to let me show him what fifteen miles an hour was like. Well, sir, he let me, and I put her through, but I didn't stop at fifteen. With a bluecoat alongside of me I thought I'd have one good spin. I just let her out and sped down the drive at twenty miles an hour. The cop grasped his hat and gasped for breath, and told me to slow up. I pretended not to hear. A bicycle cop was soon chasing us, but I kept right on, and ten minutes later there was a double arrest. But I was not alone in this. The policeman at my side had to go along, too. It soon turned out that the bicycle policeman was his enemy, and he took delight in telling his story to the magistrate. It did me good to get him in a little trouble, too. I had the fun of showing the cop how fast an automobile could go, and I don't think he'll take another free ride with a chauffeur after he arrests him.

"But the best case of this kind I ever had was out on Long Island. One of those fellows who measure the roads and sets a time watch against you, took me up one day. He was one of these smart country policemen who thinks he knows it all, and he ordered me to go along with him to headquarters. I told him to jump in, and then I turned the machine toward New York. He protested and threatened, but it wouldn't go. He didn't know anything about running automobiles, and he couldn't save himself. I put on a good speed, and we covered more than twenty miles an hour on some of the good roads. Several times he shouted to passing pedestrains, hailing them and calling for help. I guess they thought he was a lunatic or a drunken man, and they only laughed.

"I brought him to the city and then released him. He didn't have any authority to arrest me in Brooklyn, but he had my name and number, and, of course, the court's summons. However, I had my fun out of it, and that was what I was after. You may just as well be killed for a sheep as a lamb. When a fellow is arrested for nothing he's bound to get all the fun out of it possible. I think that's the way the chauffeurs in the city feel. The public is against them, the cops run them down whenever they can, the judges give it to us when they have the chance, and now I hear the legislators at Albany are going to increase our fines and make it harder for us. Say, it won't be such a cinch then to be a chauffeur, will it? But, then, of course, the harder they make it for us the higher our wages must me, and maybe in time we'll get enough for me to retire before I'm an old man."



AWAITING HIS MASTER'S CALL.

"Idiocy of the Crusade."

It is a good sign to see a glimmering of sense like this from the Lowell (Mass.) Citizen:

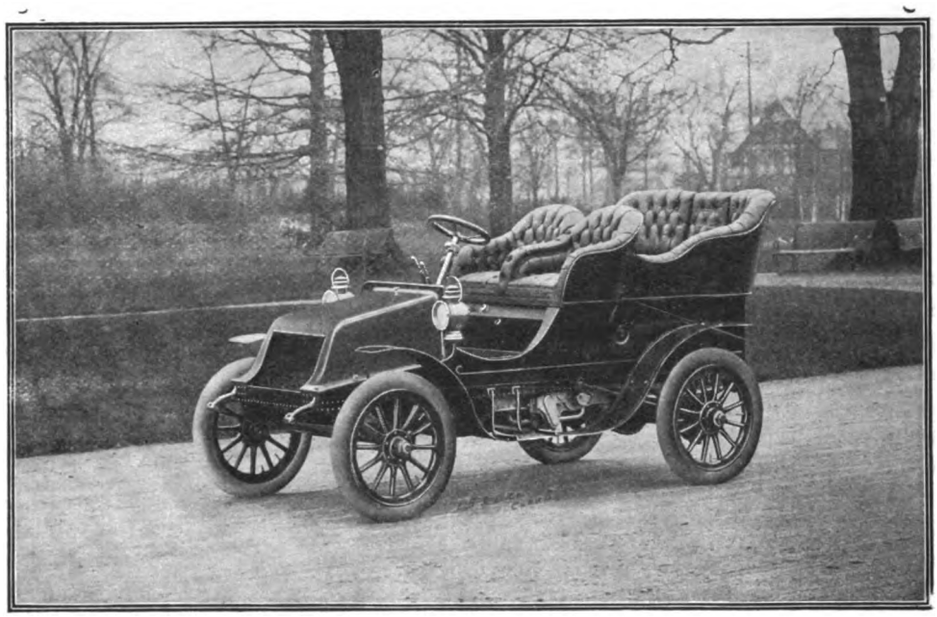
"Whether or not drivers of automobiles ought to be licensed, as is proposed by a legislator, is doubtful. Some day it will probably be as absurd as it would be now to require every driver of a horse to be licensed."

Some day the idiocy of this whole crpsade against automobiles will become plain. However disguised, it is really but a form of the widespread resistance to progress of any sort that has marked the tories of all ages. They would, if they could, prevent all progress. But automobiles are another, and a most important, step in the direction of anihilating distance, and, like Stevenson's locomotive, it will be bad for the bovine-minded individuals who get in its way.

If ever a car made a good impression wherever introduced, and won out on its merits, it is the Oldsmobile. In speaking recently of cars that run quietly on slow speeds, as well as on fast ones, the Autocar cites the Oldsmobile as a conspicuous example

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$2,500



WILL YOU

pay two thousand, five hundred dollars for a genuinely good automobile which represents the present highest standard of excellence in design and manufacture?

If you do not appreciate the vital difference between superficial perfection and construction that is honestly good and thoroughly scientific from wrist-pins clear out to the last coat of finishing varnish, then you will not be especially attracted by the new twenty horse-power

WINTON TOURING CAR

We hope, however, that you will recognize our latest successful efforts and accord this new model the consideration it deserves. You who have been conscious of the rapid development of the successful American automobile, who have watched it through its various stages since the time—years ago—when Mr. Alexander Winton ran upon the roads his first "horseless carriage," will recognize the great strides we have made toward the goal of perfection in automobile building, and can appreciate in no small sense the genuine pride we feel in this latest triumph.

It is not intended as a "sensation." It does not incorporate a vast number of rare features for which we, in justice, can claim no more than theoretical excellence. Its construction does not embody a vast number of untried experiments, and we do not, therefore, ask anyone to share in a manufacturer's gamble. In presenting this model we give the very essence of practical and thoroughly tried out experience.

Consider the matter of delivery: During the current season we will be able to manufacture just one thousand of these twenty horse-power Winton Touring Cars. A liberal percentage of the total output has already been sold. Supply will not meet the demand, of this we are quite sure. Would it, therefore, not be an act of wisdom to file your order early and allow some one else to be disappointed as the result of procrastination?

THE WINTON MOTOR CARRIAGE CO. FACTORY AND GENERAL OFFICES

CLEVELAND, U.S.A.

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Keeping the Lamp Clean.

Every one who has given the matter attention knows that acetylene gas lamps must be looked after carefully to give good results. The trouble, when it occurs, usually lies in the lamp not being kept properly cleaned or through being improperly charged. To keep the lamp at its best light giving powers, and to give the least trouble, clean water should be put into a tank every time the charge is renewed, and not merely fresh water added to that already contained in the tank. Fresh carbide should be put into the generator, and should there be any remains of the previous charge this should be removed and carefully cleaned of all the free lime which may have accumulated around it. The deposit left by the dissolution of the carbide should be thoroughly cleaned out, the generator being washed and dried before the new carbide is put in. The burner should be kept perfectly clean, and the small holes are best kept free by using the wire pickers which are usually supplied with the lamps, and then by clearing out any of the carbon deposit by attaching it to the tube of a tire inflator and well blowing through it.

Automatic vs. Mechanical Intake.

It has been urged as one of the great advantages of the mechanically operated inlet valve that the valve must be of necessity open at the correct moment, when the piston begins descent, whereas, with the type operated by suction, the valve cannot open until the piston has descended a short distance. This is perfectly true, but it must also be borne in mind that a cam can only come into action gradually, and consequently that the inlet valve is not fully opened until the piston has descended a short distance, whereas the automatic valve, when it begins to act, opens practically instantaneously. Therefore, on this score, the advantage in favor of the mechanically operated inlet valve cannot be great. If the cam should wear it will have an effect on the timing of the valve, and to put this right will be beyond the power of the owner, as it is a workshop job. Of course, such wear should not take place for a considerable period.

Inspect the Steering Gear.

No part of an automobile is more vital, from a driver's point of view, than the steering gear, for a failure leaves him suddenly and absolutely helpless, and if the speed is fast and the road a dangerous one a very serious accident may occur. For this reason the connections should be inspected regularly and carefully. As a rule, the nuts securing the various joints are strongly pinned, and as long as the pins are in position they cannot drop off. They should be glanced at before each run. If there is no safeguard of this description the autoist should make a point of attaching some arrangement which would secure the connections, no matter how loosely, should they come adrift, so that the car could be steered long enough to enable the driver to pull up. This ought to be comparatively easy.

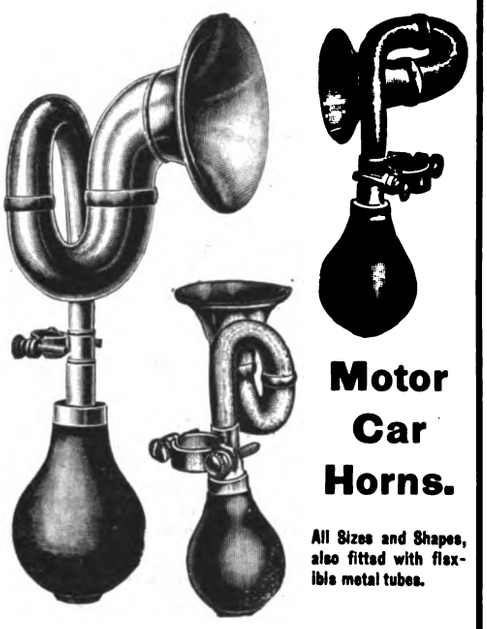
To Prevent Short Circuits.

Electric terminals which happen to be in such a position as to be subjected to water or mud accumulating upon them can be effectually prevented from possible short circuits by painting them with a varnish composed of ordinary red sealing wax dissolved in a little gasolene. This varnish is made by putting into a small bottle a quantity of small pieces of sealing wax, covering the latter with spirit and occasionally shaking it. If the varnish should prove too thin, add a little more wax or leave the cork out of the bottle until some of the spirit has evaporated. If it is too thick, add sufficient spirit to bring it down to the required consistency. For those who do not care to go to this trouble, a little melted paraffin wax can be used for the same purpose. Either of these methods is as satisfactory as binding with insulating tape.

The Best Compression.

No definite opinion as to the best compression pressure to use can be given, as conditions vary so much, but five atmospheres, or 72½ pounds to the square inch, is generally regarded as the limit of useful compression.

To arrive at the cubic capacity of the compression space in a cylinder multiply the area of the bore in inches by the stroke in inches; then multiply the result by 14.7 atmospheric pressure, and divide by the compression in pounds per square inch required.



Motor Car Horns.

All Sizes and Shapes, also fitted with flexible metal tubes.

Finest Quality Bulbs. Clear, Loud Tones.

NICKEL PLATED OR POLISHED BRASS.

Send for illustrated list and best terms.

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Distributors of

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WE HAVE CONSTANTLY ON HAND CHOICE BARGAINS IN SECOND-HAND MACHINES

A full line of standard French and American accessories carried in stock.

STATE YOUR REQUIREMENTS. WE CAN MEET THEM, IF ANYBODY CAN.

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are now all of a UNIFORM DESIGN.

WE MAKE

The American Clincher Rims

OF

SPRING STEEL

TO FIT THESE TIRES.

Write for new SPECIAL PRICES to

THE AMERICAN TUBE & STAMPING COMPANY,

BRIDGEPORT, CONN.

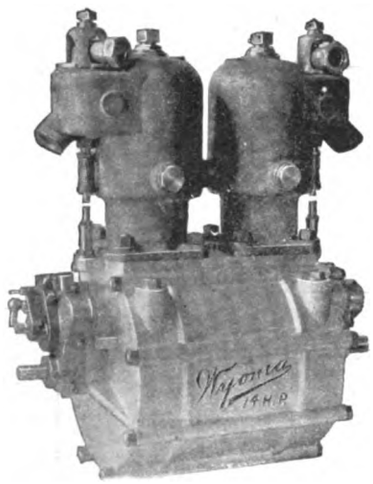
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TENTH AND EXETER STREETS

READING, PA.

MANUFACTURERS OF

GASOLINE MOTORS, DIFFERENTIAL SPUR GEARS, TRANSMISSION GEARS, TUBULAR RUNNING GEARS, RADIATING COILS, MUFFLERS, ALUMINUM AND BRASS HOODS, WOOD AND WIRE WHEELS, CARBURETERS.



WYOMA GASOLINE MOTOR

Single Cylinder, 8 H. P., 135 pounds
Double Cylinder, 14 H.P., 205 pounds.

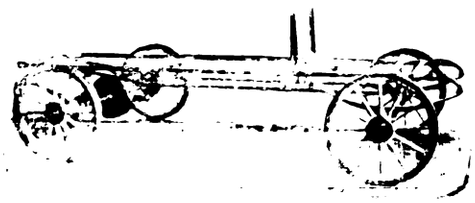
Our Motors are of French Type, Water Cooled, and Equal in Finish and Service to Best Foreign Makes.



WYOMA DIFFERENTIAL SPUR GEAR

8 pitch, — 60 teeth.

The Differential Gear has Manganese Bronze Bevel Gear. Fitted for either 1¼, 1⅜ or 1½ inch axles. Is made for Direct Drive, Rod Transmission, and also with Chain Sprocket.



TUBULAR RUNNING GEAR FOR TONNEAUS.

80-inch Wheel Base. 54-inch Tread.

The transmission Gear is built on a new system. No Bevel Gears. Gears always in Mesh. Ball Thrust at each end of Shaft. Enclosed in Aluminum Case. Will transmit up to 20 H.P.

We make a Tubular Running Gear for Tonneaus that is a marvel of workmanship, finish and construction. All material is of the best and the Bearings are extra heavy. The Differential on this is fitted for either Sprocket or Bevel Gear.

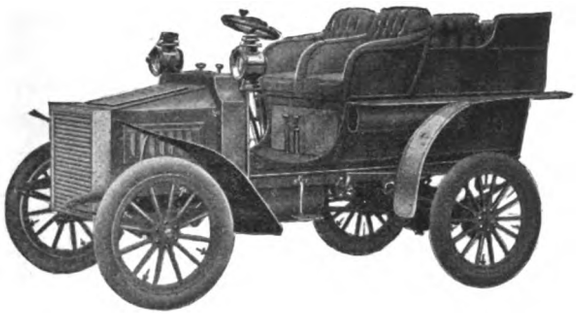


WYOMA TRANSMISSION GEAR

3 Speeds forward and 1 Reverse.

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AN AUTOMOBILE THOROUGHBRED.

In the 500-mile Reliability Contest from New York to Boston and return, arranged by the Automobile Club of America, three **WHITES** covered the distance without stop or trouble of any kind—a perfect performance.

The White Steam Generator is absolutely non-explosive, gives pressure in five minutes from cold water, and once in motion is self-regulating. In touring, the **WHITE** will make 100 miles without adding a drop of water or fuel to the original supply.

Write for full particulars, including Prof. Thurston's report on our steam generator, and the official reports of important endurance contests.

WHITE SEWING MACHINE CO.,

(AUTOMOBILE DEPARTMENT) CLEVELAND, OHIO.

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609 Main St., Buffalo, N. Y.
300 Rose Bldg., Cleveland, Ohio.
4259 Olive St, St. Louis, Mo.
1761 Stout St., Denver, Colo.

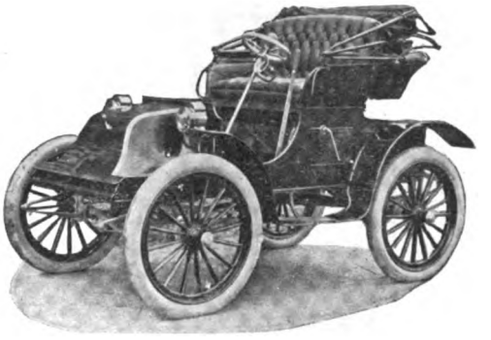
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is unique. It is its own type. It has proved the best for American roads, better than foreign types—better than the so-called "American type" of motor car. It is the oldest make in America—one of the oldest in the world—the most thoroughly developed.



It is interesting to note that the 1903 "Improvements" of the Paris Show have all been features of the Haynes-Apperson Car for years. Our throttle control and sparker with magneto is superior today to the best foreign practice; also our band clutch, free from end-thrust.

We have issued (in addition to our regular catalogue) an interesting booklet that tells why it is the best. Shall we put you down for one? You will greatly oblige us by naming THE MOTOR WORLD when you write. Catalogue free, too.

Runabout, $1200; Phaeton, $1500; Surrey, $1800.

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HAYNES-APPERSON CO., Kokomo, Ind., U.S.A.

"Eastern representatives, Brooklyn, Automobile Co., 1239-41-43 Fulton Street, Brooklyn, N. Y. New York Location to be announced later."

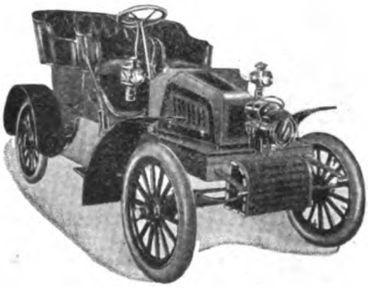
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The Shelby

GASOLENE 10 AND 20 H. P. CARS.



OUR MOTOR. Two PISTONS in one CYLINDER; takes charge in the center, forcing both pistons in an outward direction, reducing vibration to a minimum. Over 40% better efficiency than in a single acting motor.

This is only one of the many superior points found in the SHELBY CARS. For further particulars,

Address Department "F"

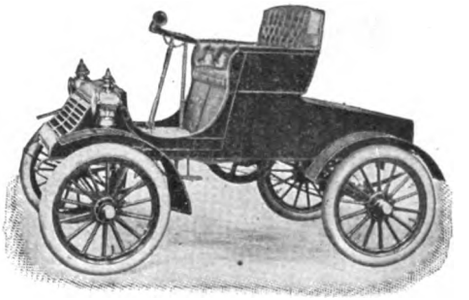
THE SHELBY MOTOR CAR CO.,

SHELBY, OHIO.

YOU

have no idea how much good there is in an

AMERICAN GASOLENE AUTOMOBILE



Why not look into the matter, and get the most solid comfort possible at a minimum cost? You wont regret it. The best material money can buy goes into the construction of this GUARANTEED SUCCESS.

You will be interested in terms to agents. Write for catalogue.

THE AMERICAN MOTOR CARRIAGE CO.,

514-520 East Prospect Street, CLEVELAND, OHIO.

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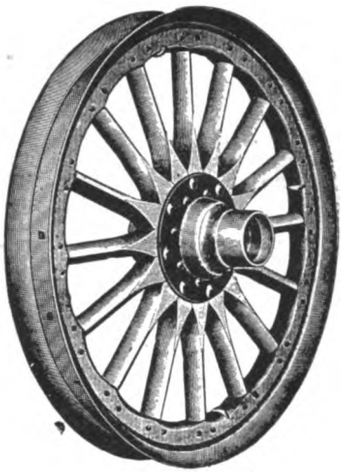
PARDEE & CO., 1404-1406 Michigan Boulevard, Chicago, Ill.
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The "Bann-Auto" Wheel

A PERFECT AUTOMOBILE WHEEL.

(FRONT VIEW.)



PATENT PENDING.

O. B. BANNISTER, Patentee and Sole Owner.

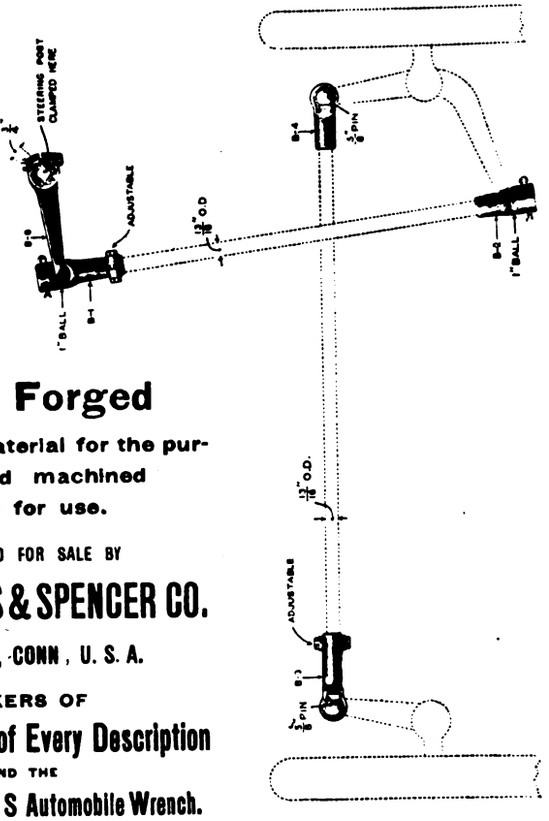
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MUNCIE WHEEL AND JOBBING CO.,

401 Boyce Avenue, MUNCIE, INDIANA.

The B & S STEERING CONNECTIONS

Manufactured under Copeland's Patent No. 391,947.



Drop Forged

of the best material for the purpose and machined ready for use.

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The BILLINGS & SPENCER CO.

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MAKERS OF

Drop Forgings of Every Description

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Celebrated B & S Automobile Wrench.

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COMFORT IN TRAVEL

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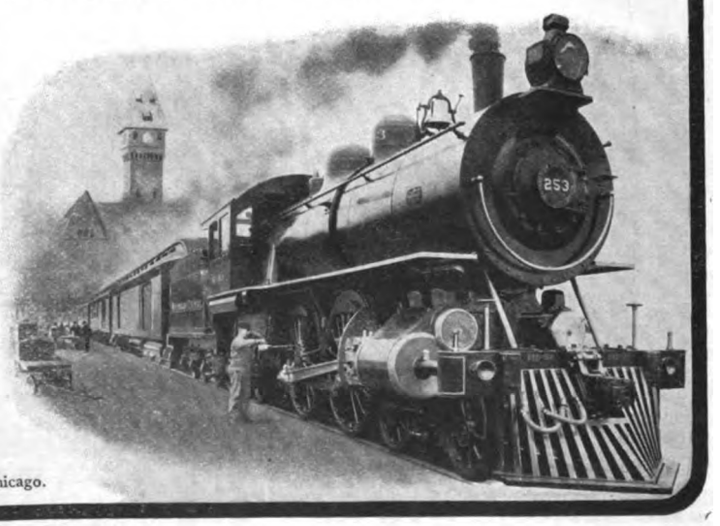
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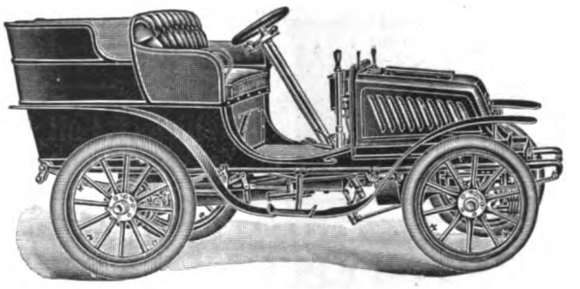
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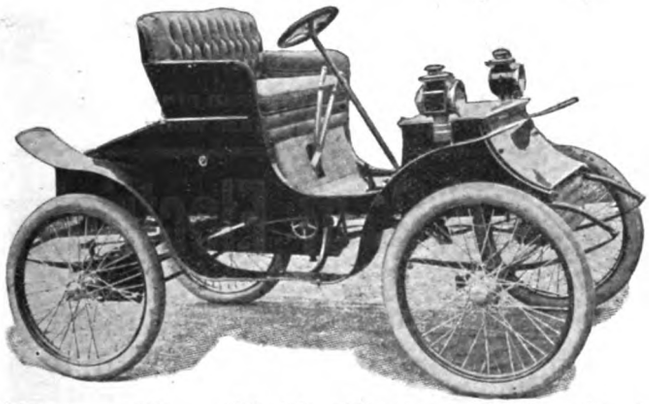
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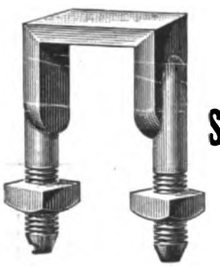
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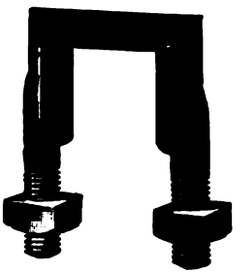
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The Week's Patents.

719,615. Support for Rubber Tired Wheels. Wilhelm Schulze, Gera, Germany. Filed May 15, 1902. Serial No. 107,383. (No model.)

Claim.—A support for rubber tired wheels comprising two curved blocks one of which is provided with a transverse slot and a plate on its outer face projecting slightly into said slot, a toothed plate pivoted to the other block passing through the slot and normally spring-pressed into engagement with said plate, a pin at the outer end of the blade to prevent the entire separation of the blocks, and springs mounted in sockets in the inner faces of the blocks, normally pressing the blocks apart substantially as described.

719,660. Electric Battery. Henry Halsey, New York, N. Y., assignor, by mesne assignments, to Halsey Electric Generator Co., Jersey City, N. J., a corporation of New Jersey. Filed Apr. 18, 1902. Serial No. 103,642. (No model.)

Claim.—In a battery, the combination with the electrolyte and the elements, of means for maintaining movement of one of said elements, and means for freeing the electrolyte from precipitates, substantially as described.

719,670. Steam Boiler. Henry A. House, jr., Hampstead, England. Filed Feb. 25, 1902. Serial No. 95,595. (No model.)

Claim.—1. In combination with a steam boiler, a removable vessel b having a plurality of openings near the upper end thereof and a feed water pipe depending vertically within said vessel, said pipe having a closed lower end and a plurality of openings in its wall, substantially as described.

719,806. Controlling Means for Motor Vehicles. Daniel E. Johnson, Hartford, Conn., assignor to Frederic C. Billings, Hartford, Conn. Filed Apr. 11, 1902. Serial No. 102,430. (No model.)

Claim.—1. A motor vehicle containing power governing means for governing the application of motive power to the vehicle, means for controlling the same, and separately operated braking means for the vehicle adapted respectively to cut off and on the power rendered available by the controlling means upon application and release of the brake.

719,822. Motor Vehicle. Shirley S. Lewis and Albert Lewis, Syracuse, N. Y. Filed Nov. 23, 1900. Serial No. 37,429. (No model.)

Claim.—1. In a motor vehicle, the combination with the front and rear axles and a transverse and convex bar on each of said axles curving upward of two longitudinally extending reaches, comprising a lower and an upper bar suitably secured together, and transverse crosspieces connecting the two upper bars and the two lower bars of the reaches with each other, substantially as described.

719,836. Gas Engine Lubricator. Harry Morningstar, Detroit, Mich. Filed Nov. 18, 1901. Serial No. 82,623. (No model.)

Claim.—1. In a lubricator of the character described, the combination with the cup, of a hollow leg depending from the bottom of the oil cup and communicating directly with and forming an extension of the oil space of the cup, a discharge arm secured to the lower end of the leg having a passage through which the oil is dascharged from the lubricator, a pipe extending from said passage upwardly through the oil space into the space of the cup above the oil, and a sight feed having a glass tube located alongside the leg and substantialy coextensive therewith and provided with an oil inlet leading from the bottom of the leg into the bottom of said sight tube and terminating in a drop nozzle projecting vertically in the axis of the sight tube and an oil outlet leading from the top of the sight tube at or about on a level with the bottom of the cup into the discharge arm, the upper end of said sight tube being provided with a fill-opening for filling the tube with water.

719,855. Stroke-Varying Mechanism for Explosive Engines. Albert F. Parks, Brooklyn, N. Y. Filed Jan. 23, 1902. Serial No. 90,913. (No model.)

Claim.—1. The combination with a pair of connected cranks, of a pair of connected differential eccentrics loosely mounted on said cranks, and a pair of elements coacting respectively with said eccentrics and controlled thereby.

719,937. Storage Battery. Bruce Ford, Philadelphia, Pa., assignor to Electric Storage Battery Co., Philadelphia, Pa., a corporation of New Jersey. Filed Dec. 19, 1902. Serial No. 135,902. (No model.)

Claim.—1. In combination a cell containing an electrolyte and its complemental elements, separators buoyant in the electrolyte, and a holder arranged above the separators to prevent their rising, substantially as described.

719,970. Vehicle Wheel. William R. Wood, St. Louis, Mo. Filed Dec. 5, 1902. Serial No. 133,984. (No model.)

Claim.—In a vehicle wheel, the combination of a hub and spokes, sleeves fitted to said hub, flanges carried by said sleeves, wings carried by said flanges to bear against the sides of said spokes, and reinforcing ribs arranged to strengthen said wings, substantially as set forth.

720,126. Speed Regulator for Explosive Engines. Lee A. Frayer, Columbus, Ohio, assignor to Columbus Machine Co., Columbus, Ohio. Filed Nov. 10, 1902. Serial No. 130,783. (No model.)

Claim.—1. In a gas and gasolene engine, the combination of a rotating side shaft, a governor actuated by said side shaft, a trip latch having a slotted end, a latch actuated by said governor and engaging and disengaging with said trip latch, a clutch cam consisting of a collar rigidly and a part loosely mounted on said side shaft, springs and oscillating dogs within said collar, a pawl carried by the loosely mounted part of the cam for operating said dogs by the action of the trip latch and a stop within the head of the cam for engaging the dogs and carrying the cam with the collar in its rotary motion.

720,253. Vehicle Wheel. Richard E. Jeffrey, Grass Valley, Cal. Filed Oct. 27, 1902. Serial No. 129,027. (No model.)

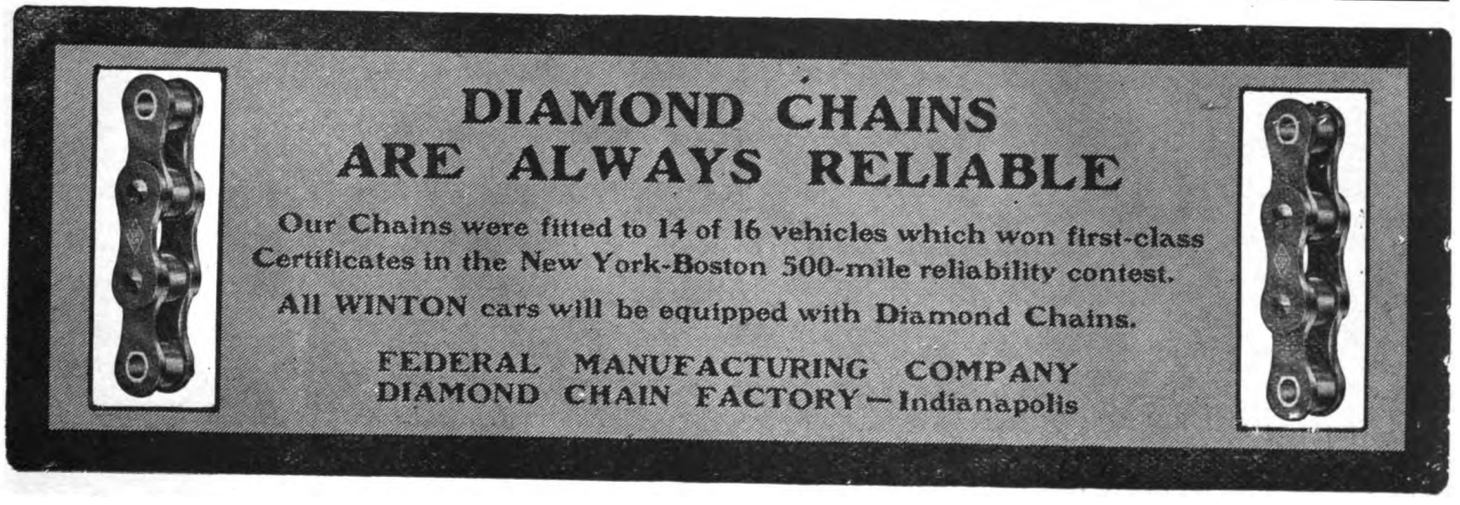
Claim.—1. The combination in a wheel hub, of opposing perforated plates between which the ends of the spokes are engaged, lateral projections at right angles to the plane of said plates, a hollow conical wedge passing through the perforations in said plates and bearing against the ends of the spokes, said wedge having peripheral corrugations in which said lateral projections may be engaged, and means upon the hub for compressing and locking the parts.

720,294. Carriage Body. Roy Stone, Washington, D. C. Filed May 28, 1901. Renewed July 17, 1902. Serial No. 115,950. (No model.)

Claim.— 1. The combination with a suitable supporting frame of substantially U shape, two supporting wheels and springs, of a vehicle body of substantially U shape and conforming with the frame and hung within the same, an interior concentric seat to the vehicle body and a low entrance platform at the forward open end, substantially as set forth.

720,821. Secondary Battery. Frank Buchanan, Dayton, Ohio. Filed March 18, 1901. Serial No. 51,763. (No model.)

Claim.—1. A secondary battery, the electrodes of which consist of three or more concentric tubular lead electrodes, the said



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electrodes being separate and disconnected so that each containing electrode separates the solution from the next adjacent outer electrode, the outermost one of each tubular electrodes, forming the main containing cell and constituting an electrode of single polarity, and insulating means between said electrodes.

720,241. Motor Vehicle. Charles L. Haase, Jr., Milwaukee, Wis., assignor to Northwestern Furniture Company, Milwaukee, Wis., a copartnership composed of Charles L. Haase, Rudolph C. Haase and Rudolph C. Forrer. Filed Dec. 8, 1902. Serial No. 134,315. (No model.)

Claim.—1. In a motor vehicle, the combination with a pivotally supported speed changing device actuated by a slidable member, of a distance rod, a movable agent for sliding said slidable member in engagement therewith and freely movable thereof, and means for moving said agent.

720,336. Vaporizer for Gasolene Engines. George A. Ede, Cobden, Ill. Filed July 29, 1901. Serial No. 70,113. (No model.)

Claim.—1. In a vaporizer, the combination with a housing having a vaporizing chamber, one of the walls of the housing being removable, of a hollow perforated member carried by the removable well, and a feed pipe communicating with the interior of the member.



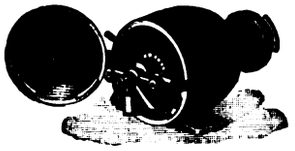
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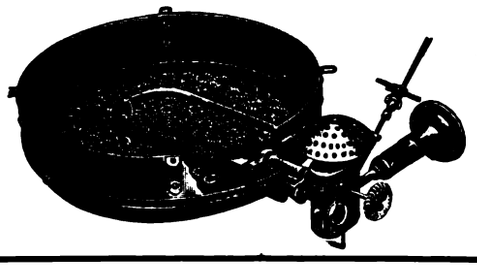


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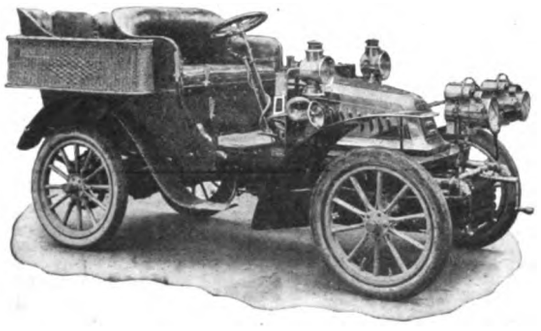
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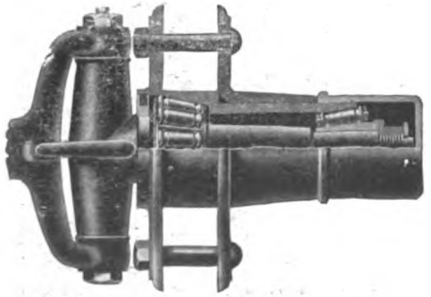


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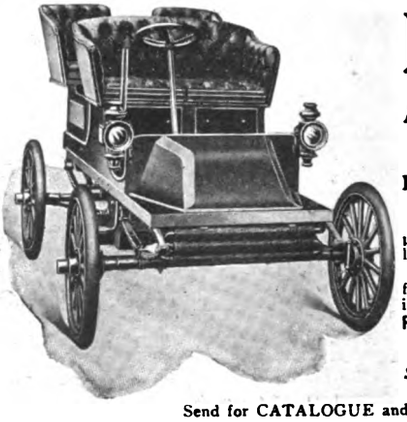


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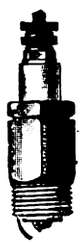
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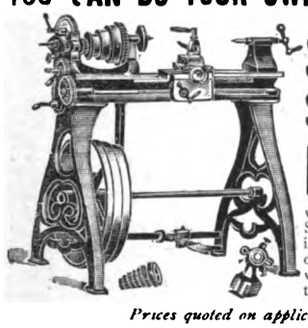
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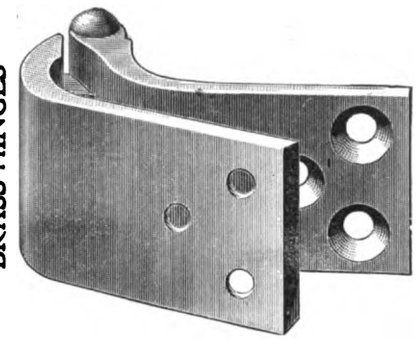
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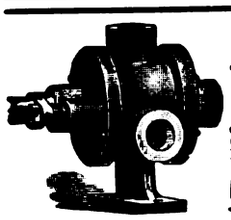
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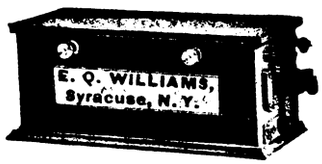


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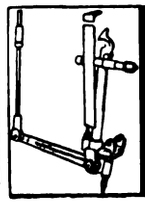
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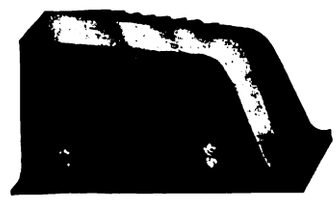
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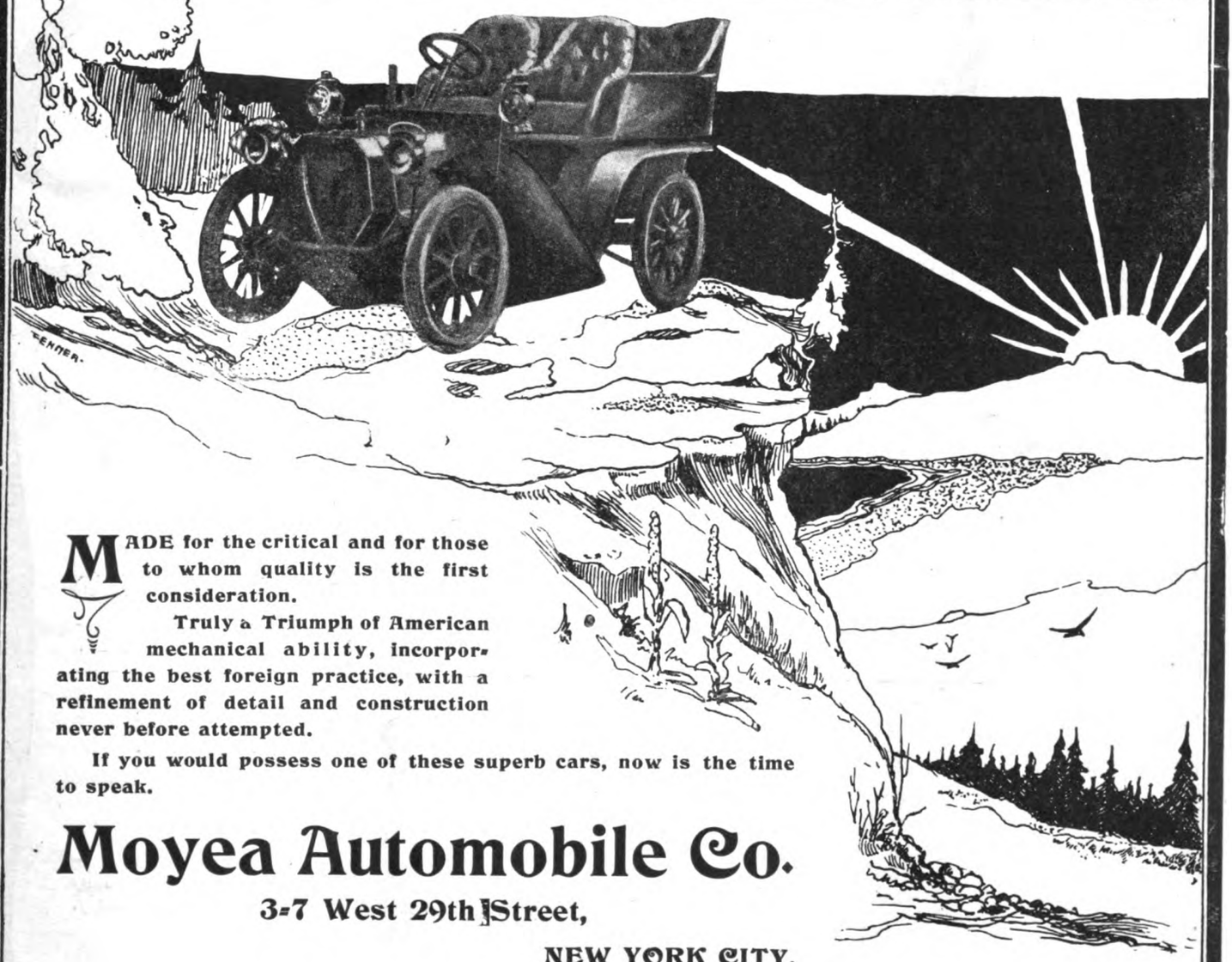
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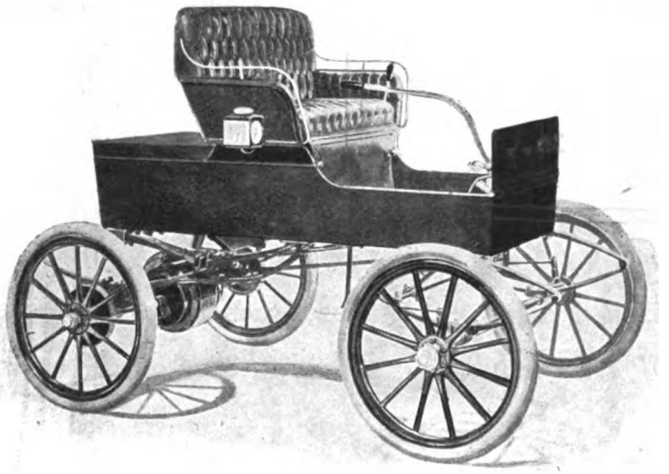
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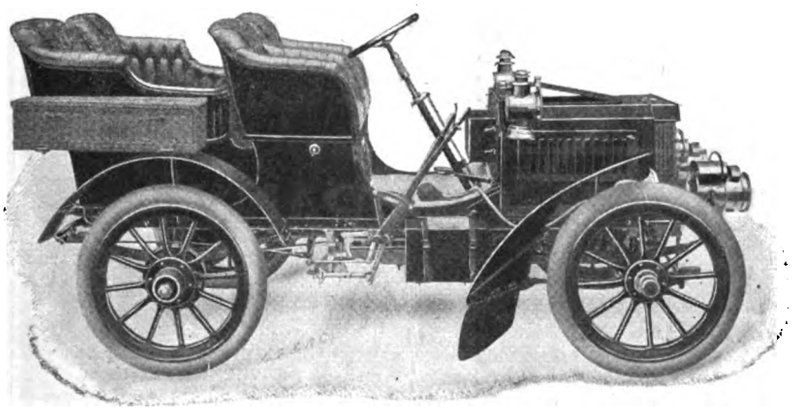
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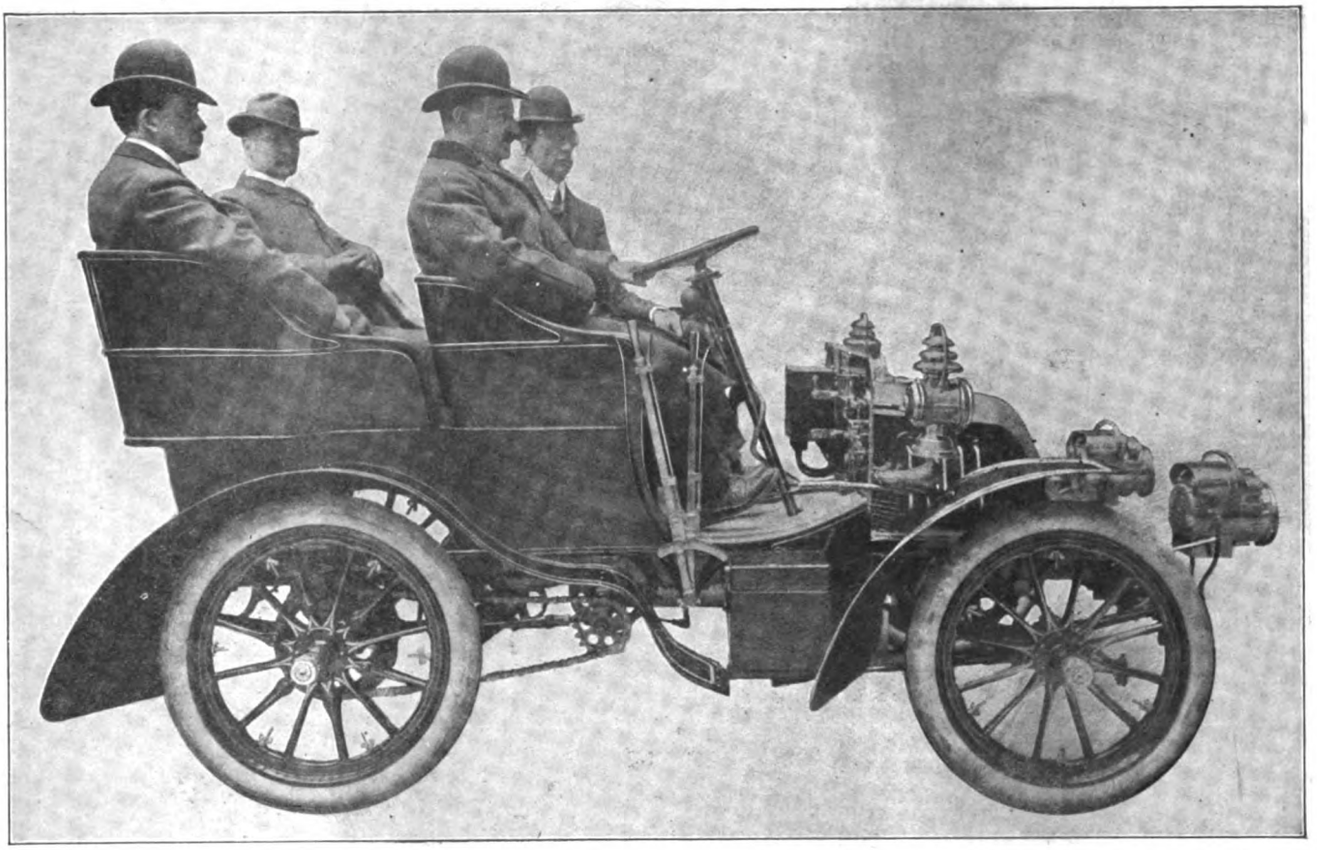
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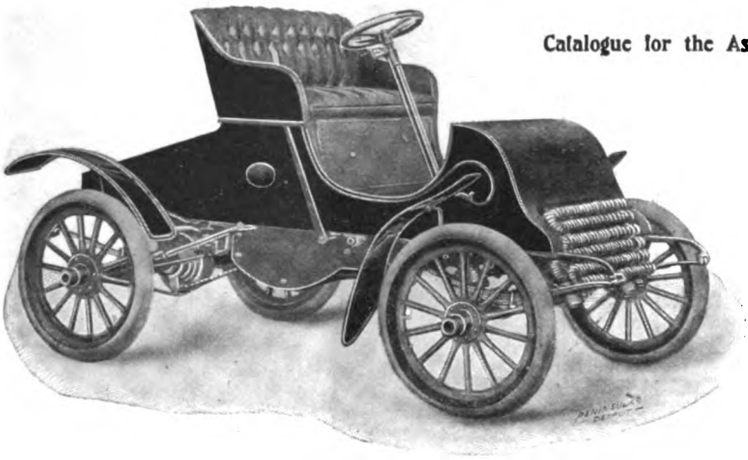
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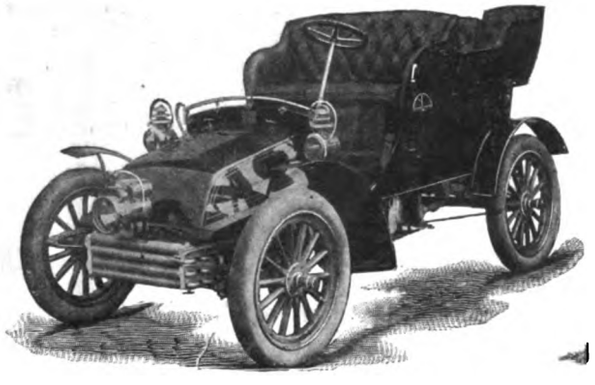
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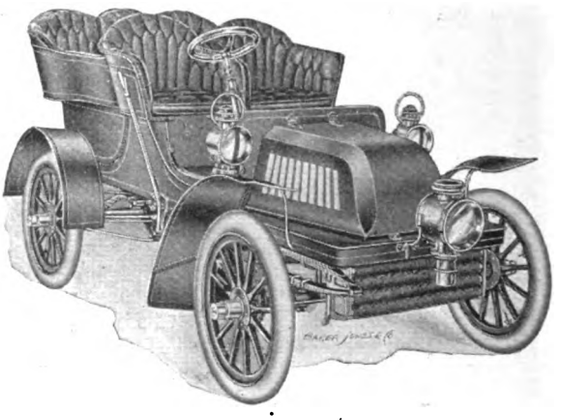
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The record for actual sales is held by the Thomas and includes the names of prominent manufacturers, railway presidents and society people.

Please consider that we can offer a car high in the $2500.00 class at $1400.00.

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E. R. THOMAS MOTOR COMPANY,
1210 Niagara Street, Buffalo, N. Y.

An Open Letter to Automobile Dealers



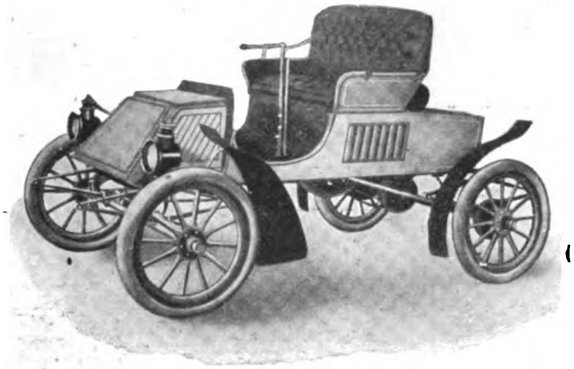
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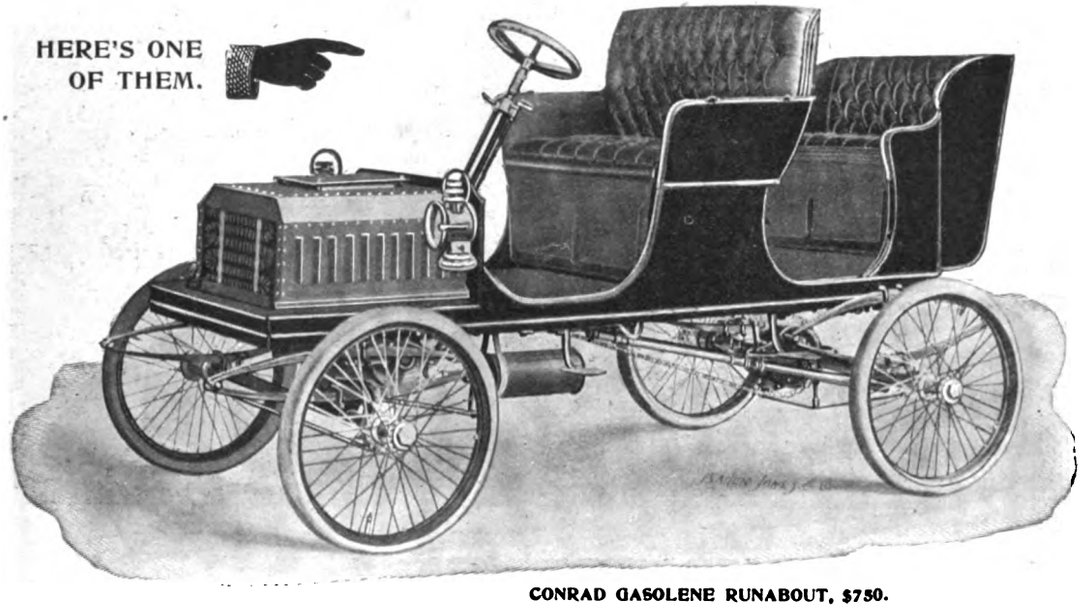
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SLIDING GEAR TRANSMISSION.

TWO SPEEDS AND REVERSE.

WHEEL STEERING.

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12 H. P. Touring Car with Tonneau, $1250, will be illustrated in next issue.

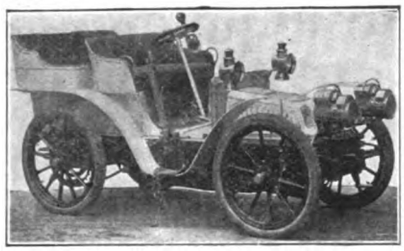
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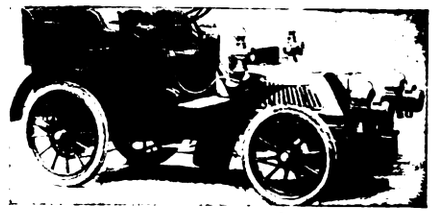
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Attracted special attention
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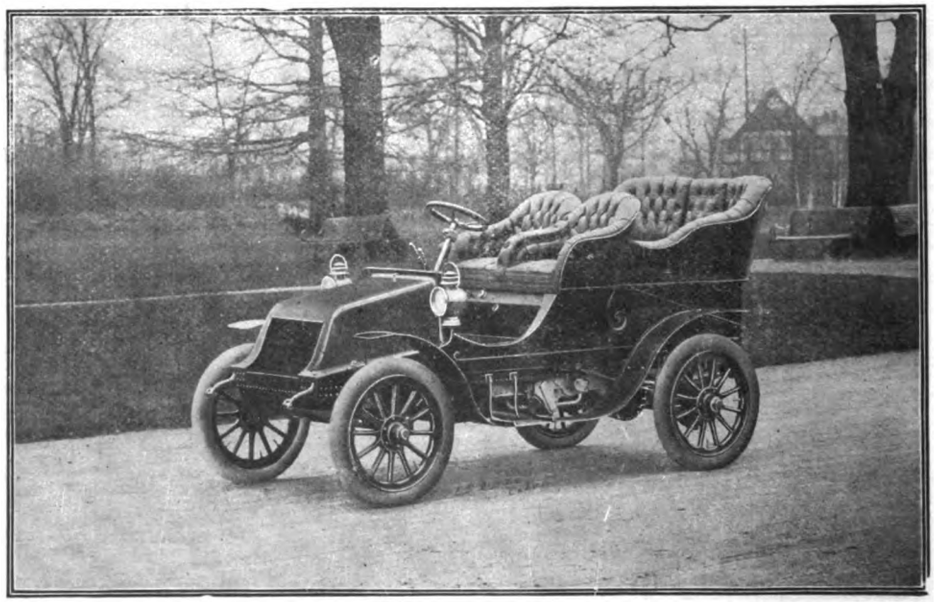
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in advising you to place your order at once if you are going to get a

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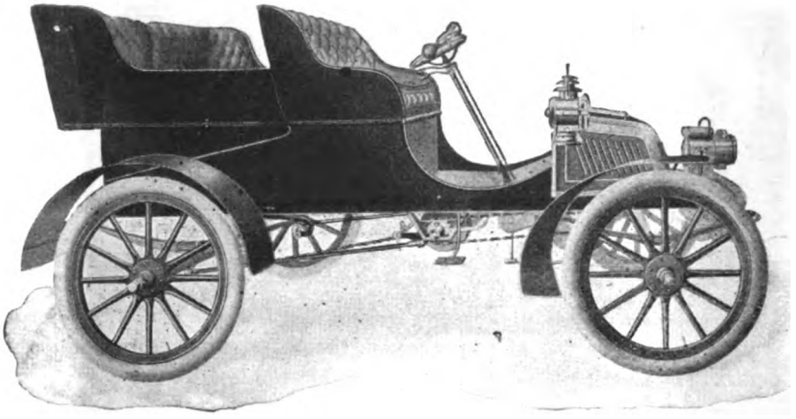
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The 7 H.P. ELMORE Runabout and 10 H.P. ELMORE Touring Car

ARE OFFERED AT REASONABLE PRICES AND BETTER CARS CANNOT BE HAD FOR AN AMOUNT OF MONEY.



WILL YOU TAKE THE TROUBLE TO INVESTIGATE ?

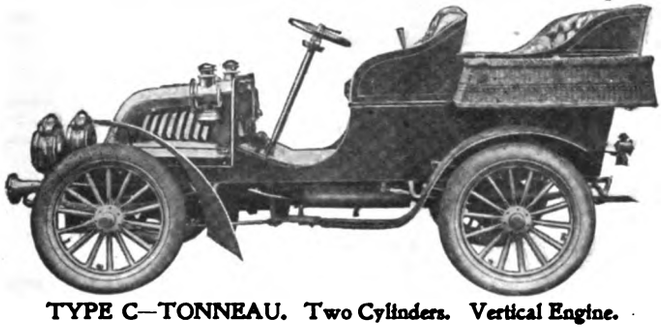
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TYPE C—TONNEAU. Two Cylinders. Vertical Engine.

Built for service, long runs and hlll climbing, simply operated, free from vibration, each part easily reached, no intricate machinery to get out of order.

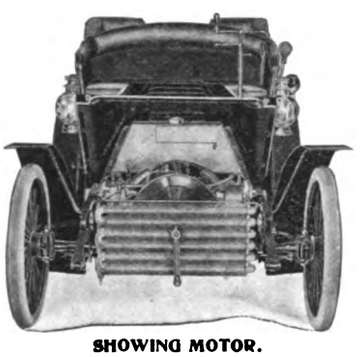
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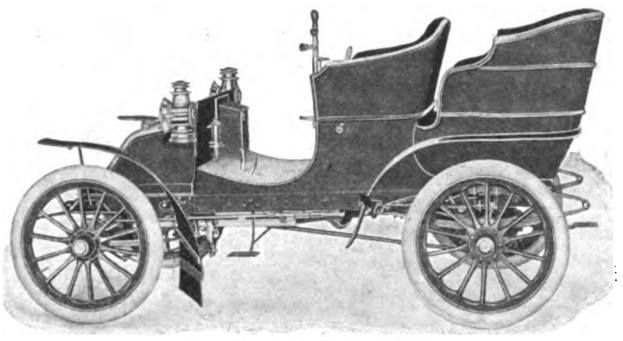
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10 H. P. GASOLENE MOTOR.



REAR VIEW.

Is a Harmonious Whole.

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IN WHEELS.

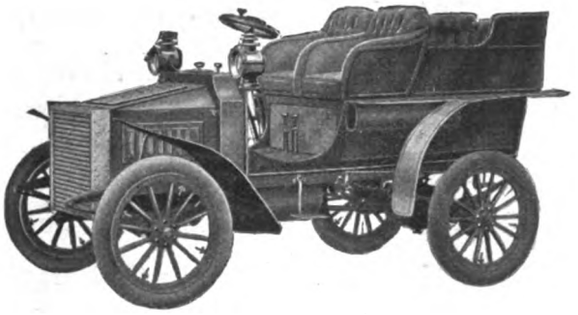
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The White Steam Generator is absolutely non-explosive, gives pressure in five minutes from cold water, and once in motion is self-regulating. In touring, the **WHITE** will make 100 miles without adding a drop of water or fuel to the original supply.

Write for full particulars, including Prof. Thurston's report on our steam generator, and the official reports of important endurance contests.

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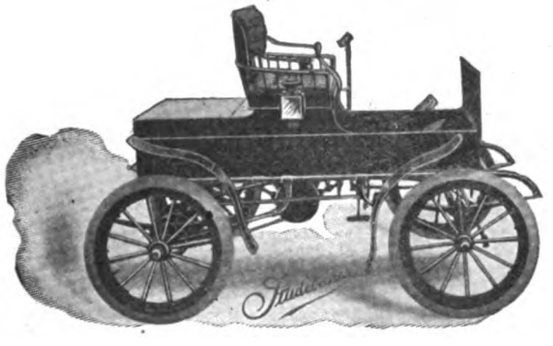
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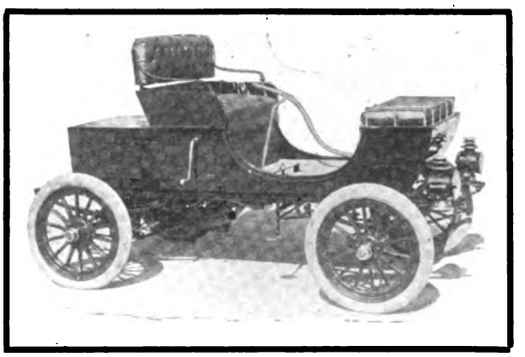
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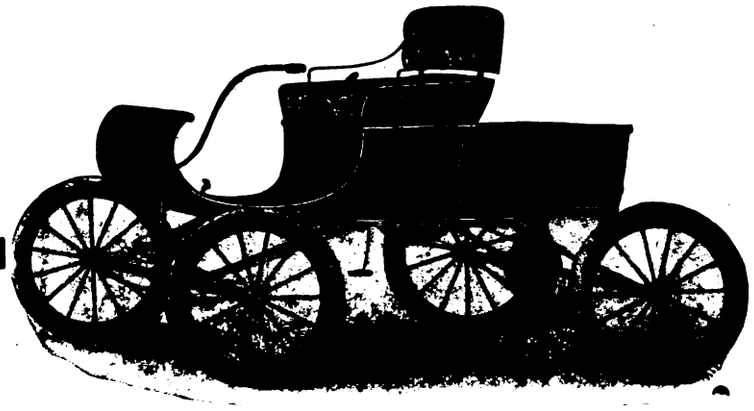
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ACTUAL proof of the reliability of the OLDSMOBILE is shown by three years use under all possible conditions.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, February 26, 1903. No. 22

OWNERS ASSURE SUPPORT

Join With the A. C. A. and Make Commercial Contest Possible—Makers Oddly Placed.

A spendid response was made last week by business firms who own motor delivery vehicles to the invitation of the contest committee of the Automobile Club of America to meet with them and confer about a competitive event for commercial motor cars. Ten different firms sent representatives to the meeting held at the clubhouse in New York on last Thursday, and the sense of the meeting was that a contest such as had been outlined. Sufficient support was pledged to warrant the contest committee in going ahead with its plans.

Messrs. J. A. Hill, Emerson Brooks and Roland R. Conklin, of the committee, were present, and among the institutions represented were the United States Express Co., by L. P. Starkweather; Adams Express Co., by A. Hirschman; National Express Co., by J. S. Getty; American Express Co., by G. W. Singerland; Bloomingdale Bros., by W. G. Lipsey; Arnold Constable Co., by G. W. Wilson; Stern Bros., by J. E. Kent; Simpson Crawford Co., by W. Krummer; Niles-Bement-Pond Co., by H. M. Cleaver, and the West End Storage Co., by A. Blumenthal.

An interesting statement was made by the representative of the Arnold Constable Co., who said that his firm had run motor wagons a total of20,000 miles at a cost of six cents per mile. The average cost per day for each wagon had been 95 cents, not including the wage of the driver.

Some manufacturers were present at the meeting, but they kept very quiet. After the session was over a man was heard to remark: "I don't know whether the contest committee intended it or not, or whether it even appreciates the fact, but what it has done puts it up to the manufacturers in a peculiar way. If these business houses enter vehicles they are apt to have men on them who may be good for delivery work, but not the ones for a competitive test. Is a manufacturer going to stand by and see one of his vehicles get the worst of it in a contest because it is not in the hands of a thoroughly skilful man? I should think not. I'll bet you will yet see the manufacturers running to cover by volunteering to furnish operators for the vehicles, and I reckon they will enter cars themselves, too."

Now the matter rests until the governors of the club meet next week and receive the report of the contest committee.

Remington Reorganization Effected.

Success has crowned the efforts to reorganize the Remington Automobile & Motor Co., of Utica, N. Y. Incorporation papers have been prepared and will be forwarded to the Secretary of State. The capital stock has been placed at $100.000, of which one-half is preferred. The shares are $50 each. The corporators are Philo E. Remington, of Ilion, and O. S. Foster and W. H. Owen, of Utica. The following are the directors for the first year: J. B. Wild, O. S. Foster, W. H. Owen, L. M. Graham, A. E. Omens, Charles Xardell and A. J. Baechle. John B. Wild will be chosen president, and the management of the business will be under the direction of W. H. Owen. As soon as possible the plant will be opened and set in operation.

Obtained Judgment by Default.

Judgment by default was given at Providence, R. I., last week in the case of the Frazer Bros. Co. against the Eastern Automobile and Supply Co. The case is one in which the plaintiff claims damages of $1,000 from Chester I. Campbell and Edward R. Bancroft, copartners, doing business as the Eastern Automobile & Supply Co., to compensate them for the loss of a "Baldwin automobile runabout" with a red running gear, which they allege the defendants did "convert to their own use."

Rainier Moves Uptown.

The Rainier Co., selling agents for the Vehicle Equipment Co., the Berg Automobile Co. and the Neftel Automobile Co., has located its offices and salesrooms temporarily at the company's charging station, Twenty-seventh street and Ninth avenue, New York. The offices will be there, instead of at 393 Broadway, until he new Rainier Building, at Broadway and Fiftieth street, is completed.

TO SELL SPAULDING

Sale set for Saturday but Bankruptcy Proceedings may Head it off.

On Saturday of this week the effects of the Spaulding Automobile & Motor Co. will be sold at auction at Buffalo. The terms of sale are 25 per cent cash and the remainder on delivery of goods.

Nelson P. Baker, temporary receiver, announces that he will take this step in pursuance of an order of court granted on February 23. It authorizes him to "expose and sell in bulk at public auction to the highest bidder, for a sum not less than $2,500, at No. 63 Chandler street, in the city of Buffalo, N. Y., on February 28, 1903, at 10 o'clock in the forenoon, all the merchandise and raw materials, tools and shop equipment, patterns, machinery and office furniture, set forth in the inventory contained in Schedule A annexed to the petition upon which said order was granted, a copy of which inventory may be seen at the office of the receiver or his attorney, or on file in the office of the clerk of Erie County."

It is understood, however, that certain creditors are not pleased with the situation and believe that the failure should be probed. These are making an effort to have the concern thrown into bankruptcy.

Darracq's New Depot.

A new establishment is soon to be opened in the automobile row on West Thirty-eighth street, New York, between Broadway and Seventh avenue. This is in the two-story brick building at No. 147, between the store of the Banker Bros. and that of the Cadillac Co. The new place will be a show room and sales department for Darracq cars, under the immediate charge of Mr. Taylor, who is now associated with Frank La Roche, the American agent. The work of refitting the interior of the new place is now in progress.

Making One Hundred for Marr.

The Marr Automobile Co., Detroit, Mich., have one hundred cars under construction. The work is being done by the Fauber Mfg. Co., Elgin, Ill.

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SEEKING JUSTICE IN JERSEY

Automobilists Find a Friend in Assemblyman Williams Whose Bill Lessens Scovel Strictures.

On Wednesday a hearing on the obnoxious Scovel bill was held before the Committee on Municipalities of the New Jersey Legislature, and it was then revealed that an entirely new phase has come upon the situation. Assemblyman Scovel is a member of the committee to which his bill was referred and he was steadfast in trying to urge through his measure. In this he was opposed by a delegation of automobilists, headed by Winthrop E. Scarritt, president of the New Jersey Automobile Club. The automobilists favored the passage of an entirely new bill, which was introduced into the legislature at their instigation by Assemblyman Edgar Williams, of Essex County, on Tuesday.

The reasons for this new situation are that, after the automobilists had objected to certain features in Mr. Scovel's bill and drafted amendments, Mr. Scovel looked them over and said that if he could take them and fix them up a little he would incorporate them. He "fixed them up" in a way that was decidedly objectionable to the automobilists, and when they tried to get him to modify his changes, he told them to get out and he would go ahead and push through his bill as he wanted it for all he was worth.

This was all explained to some of the members of the Automobile Club of America on Tuesday night before the hearing by W. E. Scarritt. The result was that a number of the members at once sent telegrams to Assemblyman Williams, indorsing his bill and encouraging him to stand by it.

The Williams bill, as explained by Mr. Scarritt, is not very favorable to automobilists, because it was deemed best not to arouse fresh antagonism, but to get rid of the "iniquitous" features of the Scovel bill "by working along the lines of least resistance." For this reason no changes were made in the speed limits fixed in the Scovel bill, the features most objected to being those which would enable any constable to arrest a man at any time, even a year after the offense, for a slight infraction of the law, take him before any justice and have that justice impose any fine or imprisonment he might please.

The objections made to the Scovel bill at Wednesday's hearing were urged by the counsel of the New Jersey Automobile Club. The sections most opposed are given below in quotations. The remarks following the sections are those of the counsel made in a draft of the bill previously prepared for the occasion. Both have been somewhat abridged.

The objection to the Scovel licensing section, which comes first, is that, as worded, it makes a man liable to arrest if he takes a vehicle home into the stable before he gets a license. The Williams bill reads that the owner shall file a declaration of competency and a written statement and that the certificate shall be issued for each motor vehicle instead of for each person.

"Section 5. . . . Such person may lawfully maintain, but shall not exceed a rate of speed of eight miles per hour where such street or highway passes through the built-up portion of a city, town, township, borough or village, and a speed of one mile in three minutes in the open country, meaning thereby portions of such communities, or otherwise, where the houses are more than one hundred feet apart, excepting in the open country upon sharp curves, and at cross roads, where the speed shall not exceed one mile in ten minutes."

The Williams bill contains a provision that the speed limit shall not apply to physicians and surgeons.

"Section 9. Any person driving a motor vehicle upon any public highway, or other public place in this State in a race or on a bet, or wager, at a speed exceeding that herein provided for, shall upon conviction be fined in a sum not exceeding $50, and in default of payment thereof be punished by imprisonment in the county jail for a period not exceeding twenty days."

The original bill as printed provided for a penalty of $25 for a general violation of this act, but the Scovill bill omits this section and leaves it quite free to the justice to impose any penalty he may see fit so far as this bill is concerned.

The difference between six miles an hour and six and a quarter miles an hour must be, in the absence of accurate mechanical speed indicators, a matter of opinion. The driver of the automobile must, in the majority of cases, guess at his speed. The officer who arrests him must also guess at his speed. The justice is the last guesser, is likely to guess with the officer, and the effect of this action is to leave no limitation by statute upon the power of the justice who enforces his guess by fine or even by imprisonment.

"Section 10. Upon oath or affirmation made according to law, that any person has violated any of the provisions of this act, any magistrate of the county where such offense is committed may issue process in the nature of a summons or warrant in his discretion, at the suit of any person. . . . If the magistrate before whom such trial is had, shall find the defendant guilty, he shall give judgment for the penalty mentioned in the section or provision herein violated. In default of the payment of the judgment and costs the defendant so convicted may be sentenced to the county jail for any period not exceeding thirty days."

There is no limitation on the time when the complaint may be made and filed. It is possible to wait two years and to charge a man with having run 6¼ miles an hour for 10 feet where he ought to have run 6 miles an hour for the same 10 feet, and have him arrested for it two years later when all knowledge of the transaction has passed out of his mind. The language of the act in reducing the limit of speed to almost an impossibility renders the penalty of infringing the law so imminent that it ought not to be within the power of a constable, or any other person, to guess that a man is going at the rate of one mile in 9½ minutes, while he is walking faster than the automobile, and have this automobile driver arrested.

Sections 12, 13, 14, 15, 16, 17, 18, 19 and 20 do not differ materially from the Williams bill.

Summing up, the objectors to the Scovell bill say:

"1. The principle of the Scovel bil is to fix arbitrary rates of speed. The Williams bill accepts these rates of speed.

"2. The theory running through the Scovel bill is that the automobilist who exceeds unintentionally and unknowingly these very low limits a criminal, to be arrested and put in jail.

"The Williams bill provides that for the first offense, unintentional infraction of the speed limit, the offender is to be summoned before the magistrate and to be given a hearing.

"3. The Scovel bill permits the automobilist to be arrested at any time after offense and complaint made by any one, and allows the arrest of the automobilist in any part of the State at any time upon such complaint.

"The Williams bill differs from this in this respect, that it does not permit a man to be arrested for the first offense, that it limits his fine to $25 for infraction of speed limits, under ordinary circumstances.

"4. The Scovel bill contains no limitation upon the punishment, whether by fine or imprisonment, upon the man who infringes the speed limit. It makes it a crime for the man to exceed the speed limit whether unknowingly, unintentionally or otherwise.

"There is a startling absence in the provision of the bill. It makes the infraction of the speed limit a crime, but does not limit or define the punishment of the crime, which remains in the discretion of the justice whether to fine, imprison or otherwise punish as he pleases."

The Law Favored by Connecticut Fire-Eaters.

Remarkable in its simplicity and directness is the infamous Warren bill introduced in the Connecticut legislature a short time ago. One can understand its author declaring, as he did, that the rifle could be used to advantage in dealing with autoists.

The measure in full is as follows:

"Section 1.—That no automobile, locomobile, electric carriage or horseless vehicle of any description shall be allowed to run over the country roads in this State at a rate of speed greater than eight miles an hour.

Section 2.—That any automobile, locomobile, electric carriage or any vehicle propelled by steam, gas or electricity, shall, upon approaching any vehicle drawn by one or more horses that show signs of fright, come to a full stop and so remain until such horse or horses shall have been brought under subjection or allowed to safely pass.

"Section 3.—Any person or persons violating either provision of this act shall be fined $300 and thirty days' imprisonment, or both. One-half of the fine to go to the person giving information leading to the arrest of the offender and one-half to the town where the arrest is made.

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WITH OR WITHOUT BODIES

The "Chassis Only" Policy Arouses Discussion and an Interesting Diversity of Opinion.

"It will come to that, but the time is not yet."

This in brief is about what the trade opinion is concerning the selling of the chassis and body separately, or having the makers of the motors produce the chassis only and sell them to customers, leaving the latter to get any style of body fitted he may choose.

A partial canvass of the trade in New York City shows that while there is now quite a general opposition to the idea of the builders doing this, the majority of the agents think that the change is likely to come in another year or two and business be done here as it is in Europe. Of course the makers of runabouts are least bothered about different styles of bodies. They make one pattern and it is a case of "take it or leave it" for the customer. If he doesn't like the style of the body he will have to buy some other make of runabout with a different engine. This may seem hardly the thing to the customer, but at present he cannot help himself, for the maker will not make a special body for him. The dealers in runabouts say, however, that they are not yet troubled by any demands for bodies different from what they offer, the buyers seeming to be content to take what is offered.

With the buyers of tonneau cars, though, the story is different, and already there are evidences of a growing inclination on the part of customers to designate some special style of body. This condition is being met by the makers, a number being willing to build bodies of special design to order in their own shops, or when this is not satisfactory, to sell the chassis only. Most of the New York agents seen on this subject by a Motor World representative objected to being quoted, because they did not want to be put in the light of dictating to the factory, but several agreed with the sentiment expressed by one, who said:

"If the factory people could have my experience in selling complete cars they would not extend their body building connections. To make cheap and satisfactory bodies it is necessary, as in every other line of manufacture, to produce in quantity. One or two or three styles of bodies are not enough to please every one. If a customer wants something different from any of our models and orders one made, he is delayed in getting his car. It would be better to sell him the chassis and wash our hands of him by turning him over to a body building firm who turn out enough varieties to please every one. That would be the logical method, and that is what is bound to come."

Another dealer, one of a firm handling French cars, was much more outspoken, taking strong ground against the proposition.

"For heaven's sake, don't advocate such a thing as selling the chassis alone," he exclaimed. "We have trouble enough as it is, without adding to it. Why, a special body can't be built inside of three months. You can't hurry the painting without making a bad job of it, and in a little while it will look like slop work."

"But couldn't a certain number of bodies be kept in stock to select from?" he was asked.

"It would not do any good. Each purchaser would want something different from the stock patterns, and no body concern could do more than keep a few of the styles most likely to be used. These could hardly be sold, for then there would be no sample to show; and if they were kept on hand they would be of little value at the end of the season.

"It was only the other day that I sold a car to a customer. The body didn't quite suit him, and in preference to having a new one made for him I talked him into having some changes made in the body already on the chassis. Now, it will take six weeks to have those alterations made, and delivery will have to be deferred until then. Now, what kind of business is that? If we could have persuaded him to take the car as it stood the transaction could have been completed at once. Now we have to wait and maybe the body won't just suit when we go to deliver it, and that will mean more trouble.

"No, sir, we don't want any chassis business in ours. The worst thing that could happen to the trade, just now at least, would be the advocacy of such a policy."

Still "Expecting" Edison's Battery.

A Motor World man felt inquisitive about what the Edison battery might be accomplishing about this time. According to the statements made by the talk-charged representatives of the battery at the New-York show, the batteries should now have been in use by B. Altman & Co. for several weeks, for the statement was made at the show that this firm was to have several wagons equipped within a couple of weeks.

The Motor World man therefore sought the superintendent of the Altman store, and asked him if he had any wagons in service which were using the batteries. The answer was:

"No, not yet. We are expecting to get the batteries every day now. We have been expecting them for a year."

"But I thought you had a lot ordered and were assured of delivery about the last of January. That is what was said at the Edison stand at the show."

"No, we have no order placed. We are like every one else, simply looking for the thing that will do the trick. We have been promised some of the batteries to try, and we are waiting for them. We expect them day by day."

IMPROVED TOWARD THE END

But at That, Chicago's Show Fell Far Short of Anticipation—Some Opinions of it.

The Chicago show, which closed on Saturday night last, proved disappointing to the end. In point of attendance and sales the last half of the week was a distinct improvement on the earlier half, but the general satisfaction that marked the New York event was as markedly lacking.

The exhibitors who reported "good business" were the exception and not the rule, and while many were averse to having their opinions put into print, in private conversation they did not attempt to conceal their disappointment. Several went so far as to say they would never again exhibit at Chicago, while at least two seriously remarked their belief that one national show—that in New York—is sufficient for all purposes.

These are not pleasant truths, but, unpleasant though they be, it is only fair that they be recorded.

It is not designed to convey the impression that none were satisfied with their sales during the week, for there were those who "cleared expenses" and had small fault to find, while questioning was not necessary to disclose that the Olds Motor Works had done well. There were also a few, like the E. R. Thomas Motor Co., who were immensely pleased, their sales having exceeded even their orders booked at New York.

But against all these was the preponderance of opinion that the show, save as a spectacle, had fallen far short of expectations.

Course for Boston's Christians.

Boston's Young Men's Christian Association pays unusual attention to practical subjects. It has classes in mechanical drawing, etc., and makes a specialty of fitting its members for business life. Consideration is now being given to a course in automobile and gas engine construction, which is a possibility for next year.

All Ready in Philadelphia.

At the Philadelphia show, which opens on Saturday at Horticultural Hall, all the space devoted to complete vehicles has been taken. Under the arrangement of spaces, the cars and sundries are separated. The former occupy what is termed the upper hall, and the latter the lower hall.

Recent Incorporation.

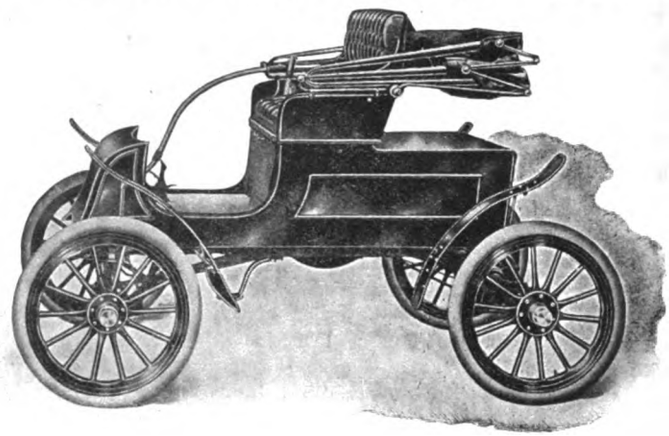
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that is ready when you want it, has power enough to take you anywhere, and is strong enough to stand up under the hardest kind of usage. Anybody can operate it.



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P. DESMARAIS & CO., Bristol, Conn. BANKER BROTHERS COMPANY, Philadelphia, Pa. R. V. CONNERAT, Savannah, Ga.
OHIO MOTOR CAR CO., 317 Huron St., Cleveland, Ohio. NATIONAL AUTOMOBILE & MANUFACTURERS CO., 26 Fremont St., San Francisco, Cal.
FRANK P. ILLSLEY, 284 Wabash Avenue, Chicago, Ill. MOTOR CAR CO. of N. J. Newark, N. J.



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DEVOTED TO THE AUTOMOBILE
And Kindred Interests

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Anchors to Windward.

Some papers and people are prone to prate of the "automobile boom" and to bring to bear comparison with the "bicycle boom." Usually the talk is coupled with prediction or fear that the slump that followed the tidal wave of cycling interest will mark also the newer interest.

It is not to be denied that the trade lacks boomish symptoms and that men with idle factories and little capital or no capital at all are attempting to break into what appears a new Eldorado, and undoubtedly some of these will be "bitten" and cry out for pain and disappointment. But all other considerations aside, the automobile industry and the bicycle industry differ in this vital respect: Any one could make a bicycle that would run; not all who try can make a motor car "mote."

This is one safeguard. Another is the great number of bicycle manufacturers who are now successful and substantial manufacturers of automobiles. If lessons learned in the school of stern experience are of value these makers should be able to distinguish and to guard against either upward or downward tendencies of the boom, what ever size or shape it may assume.

One Test Badly Wanted.

Next to the development and furtherance of commercial vehicles, we fully agree with our coutemporary, the Horseless Age, that the automobile interests require nothing so much as a public cold weather test.

The impression that the motor car is essentially a fair weather vehicle is too general, and something is necessary to eradicate it and to prove the motor's utility and practicability in "rain or shine, hail or snow and every kind of weather."

It is now too late to promote an event of the sort, but the Automobile Club of America or some other body of influence should make note of the fact and not permit another winter to pass without public demonstration of the sort. Private performance, however meritorious, is of little, if any, effect.

The "Embattled Farmer."

Of late years the ruralist has been undergoing a belated and very necessary rehabilitation. His fondness for blocking the wheels of progress appeared to have abated, and he seemed to awaken to a realization of the fact that the role of chronic kicker did not pay. His distrust of everything associated with the "city man"—unless he carried the implements for playing a shell game—relaxed a bit. He even began to admit, grudgingly, to be sure, that good roads benefited him quite as much as they did the urban resident.

But the inborn tendency to obstruct dies hard. The automobile—that transportation agent that is destined to still further revolutionize the life of the country resident and to carry on the work the bicycle and the trolley car has begun—is looked upon as his natural enemy. The loneliness of the farmer's life, and the life of his wife, son and daughter; the remoteness from the centres of thought and intelligence and life—this has been the chief factor in emptying the countryside and sending its onetime inhabitants to the congested cities. The annihilation of distance will start the tide in the opposite direction. The urbanites, or many of them, sigh for suburban delights, and it only needs to place the country within reasonable distance, measured by time, to secure them as residents.

Here lies the farmer's opportunity. The automobile makes it possible for him to get to the city whenever he wishes, and brings the denizen of the city to the country. Its multiplication is of vital interest to the farmer. Instead of opposing, he should encourage it. By its use the suburban limits will undergo a great extension, the land of the farmer will advance in value, his comfort and pleasure will be promoted. Every consideration urges him to welcome it, to encourage its use.

But we are to-day confronted with the sight of the "embattled farmer" erecting himself in opposition to the motor vehicle. To him it is like a red flag to a bull. Like the Irishman, for him to see an autoist's head is to hit it. If the automobile becomes a common sight in remote rural districts it will be in spite of rather than by grace of him.

The present flood of anti-automobile legislation is largely the work of the rural legislator. He is "agin" automobiles. They must accommodate their speed to that of his slow-going nag, taken from the plough to draw the buggy. If the horse or its driver should show fright it is the automobile that is to blame. Best of all it would be to keep it off the road altogether; but, failing that, the proper thing to do is to load it down with restrictions that will prevent its increase and multiplication.

Of course, the time will come when the egregious folly of all this is perceived. The farmer will finally have it borne in on him that the automobile is his friend, quite as much as that of the city man. And the motor vehicle will fulfil its destiny in spite of this and other forms of opposition. But it does seem a shame that it should meet with such treatment, and be hampered and bullied and baited as if it were the enemy of mankind, instead of its best friend.

Why no Installments.

For the present the automobile business is, and probably will be for some time to come, a clean one. Installment sales are unknown. The purchaser of an automobile must pay cash, or its equivalent, before he can indulge in what in some quarters is termed a rich man's pastime. The insidious practice is certain to be followed some time, of course; but in these halycon days no would-be autoist is daring enough to ask for, and no dealer foolish enough to grant, easy terms for artlcles as readily saleable as automobiles. In a sense, the autoist must live up to his repu-

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tation if he hasn't money he parted with it for his automobile.

In all seriousness, however, the evil day of instalments is one that should be put off as long as possible. In itself the practice is not necessarily harmful; good men—desirable autoists—may have recourse to it and no stigma attach to them. Sales can be greatly expanded by the simple expedient of retailing at so much down and a specified sum per month. Thousands of people will thereby have the horseless vehicle placed within their reach who otherwise would be utterly unable to acquire them. And, as stated, the time will surely come when the bars will be let down and the short pursed public permitted to swarm in.

But all this is a matter for the future. It can safely be left to take care of itself. Certainly there is nothing to gain by hastening the matter. With factories taxed to their utmost capacities and an abundance of buyers on the regulation terms, there is every reason why the old order should not be changed.

Where More Light is Needed.

Travelling through the different localities occupied by the big automobile agencies and garages, there is to be noticed a striking lack of enterprise, or misguided economy, in the absence of electric lighting and general display.

There is no business that is above this sort of thing. Brilliant lights in front and within and artistic window dressing are considered indispensable by the greatest merchants. Automobile stores have not much scope for window display, but the windows can be so draped or set off with palms that they will not present a barbaric bareness that jars the eyesight, as some windows do now. The window trappings are, however, secondary.

First of all is the matter of electric lights outside. They are expensive, yes; but not so costly as the passing by of thousands and tens of thousands without knowing what sort of a place they are passing. Men and women cannot get past the brightly illuminated places on the thoroughfares without taking note of them, and just at present in the development of the automobile business is the time when every establishment of the sort should somehow be made to "stick out" so as to obtrude itself upon the notice of the casual wayfarer. No matter whether the place is one that is kept open nights or not, there are persons happening along in cities at all sorts of odd times, and every now and then there will be one to exclaim, "Hello! I didn't know that place was there before. I'm glad to discover it."

If the place is on a side street near a busy avenue, as most places in big cities are, there is all the more reason for lighting up and catching the eyes of the throngs on the thoroughfare. The word "automobiles" and the name of the owner or manager or make of car should always be coupled in the display. At the very least the interior of the stores should have electric lights and not left looking like country shops at night.

It is useless to try to be superior to the need and use of such display. A bright light attracts men and women as surely as it does moths, unless the men and women are blind, and there are not many automobiles being sold to the blind nowadays. It is not to be considered as "cheap" to make a display. A "fine front" is not necessarily a "bluff," but it necessarily does command attention. Automobile agents are as yet cultivators in a new field, and they want to attract attention. They should not hide their light under a bushel or anything else, but should let it so shine in front of their establishments that the unconverted may behold it. The good done by store illumination will be a direct one to the storekeeper, and an indirect one to the industry at large, by impressing the public with the number of automobile establishments and their evident prosperity. The effect of such an impression is a subtle one. It sends home a person with the conviction, gained unconsciously, that "the automobile is the thing."

As the great Goethe said, "More light." If we have it we will have more buyers.

Steam's Increased Radius.

Only a very short time ago the user of a steam car had it impressed upon him that he must oil early and often. Every fifteen or twenty miles at the most he must stop, get out his oil can and lubricate his engine. Neglect of this simple precaution might mean ruin, it certainly meant trouble and a repair bill.

At the same time, and considerably later, too, he was confronted with the necessity for making frequent stops for water.

A gallon of the precious fluid for every mile travelled. Such was the formula, and it still holds good. Tanks holding more than twenty or twenty-five gallons were rare, consequently the user of a steam car knew that he was due to hunt for a water trough every twenty or twenty-five miles—perhaps oftener. If he could not find a trough he could carry the water from a stream or hydrant in a pail, for get the water from somewhere he must.

A great change has come about since then. Automatic oiling devices have abated the lubricating nuisance, and condensers have performed a similar service for the water tank one. It is not uncommon to find steam cars with a guaranteed radius of fifty to one hundred miles. In this respect gasolene cars are emulated and frequently equalled. A load has been lifted from the mind of the steam user in consequence, and he is able to take long jaunts with infrequent stops.

To "turn on the light," in electrical matters is to prevent a host of troubles. A naked wire never conceals a breakage, as does one insulated in the usual manner. In the same way, a wire fastened to a terminal by means of the regulation thumb screw may very easily give imperfect contact and yet conceal the fact. Present practice is all in the direction of looking after such matters, and we shall be surprised if there is not a marked improvement noticed this season.

When the automobile no longer attracts attention—when the pedestrian ceases to stop and watch it pass—it may be said to have become a part of the busy city life, almost indistinguishable from trolley cars, elevated railroads, etc. Such time has almost come for the greater number of motor vehicles. It is only the big touring cars, with befurred chauffeurs and passengers, that claim notice now.

There is one type of horse drawn vehicle that has not yet been pressed into service as an automobile, and it is not due to its having been overlooked by designers of the latter, either. The dog cart and similar two-wheeled carriages have been left severely alone.

From effete Boston comes the fantastic term, "Aumobs." This is enough to fill even the best behaved horseless vehicle with a desire to rise up and protest.

If silence is golden, as we are told, then many "gasoleners" are still a long way off from that delectable condition.

The season's crop of "freaks" is much smaller than of old. Clearly the day of uniformity is getting close at hand.

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Commentary

I clip what follows from the columns of a daily which proudly boasts that if you read a thing there 'it it so": Thomas A. Edison, in a stain-spotted suit and an old slouch hat drawn well down on his forehead, straigthened himself up from a dilapidated little table over which he had been bending, threw a stub of a pencil down on a yellow pad of paper, and settled back in an arm chair. 'At last,' he said, 'I've finished work on my storage battery, and now I'm going to take a rest." He gazed thoughtfully out of a window of his laboratory office for a moment. 'For I'm tired—very tired,' he added simply. 'I'm all worn out.'"

While not by any means believing all the foregoing, excepting the very appropriate color scheme of the pad of paper Mr. Edison is credited with using, I can assure Mr. Edison that he and the public are certainly as one in regards to this battery yarn —both are "tired—very tired."

* * *

The problem of how to make an automobile progress at the rate of a mile a minute is very much less difficult of solution than is the question of how to stop it at the same speed is. Inventors and space annihilators please note.

* * *

That particular brand of idot which devotes itself to the creation of the alleged comic valentine for his friends and relatives to purchase and send through the mails in the perpetration of what they undoubtedly imagine is something exceedingly witty, could not have been expected to have let the motor vehicle pass unnoticed. For once the expected happened, and the automobile was duly comicalized and valentined. The result was naturally something any admirer of wit or wisdom might indeed be proud of. One of these valentines which reached me had something on it which was between a scrambled egg and a nine of spades, but which the artist probably meant to be an automobile. Under this was these touching lines of "poetry":

Water, oh! Water, oh!
Every mile or so
You auto give your auto water
Water, water, oh!

* * *

I am an admirer of the Automobile Club of America, please don't forget that. But because of this admiration of mine I am not blinded to the faults of this very progressive organization. Even the sun, bright as it is, could not be a citizen of Spotlesstown, as you well know. To remove these spots nothing it likely to be successful as the sapolio of criticism, hence mine in the present case. The club recently issued a call for its opening run on Washington's Birthday to Lakewood. After this announcement had been duly heralded, another bulletin was issued saying that on account of the muddy roads, which were the exception between here and Lakewood, the run to that aristocratic resort would not be undertaken, but one to Philadelphia would be attempted in its stead. Now, it was all right enough to call off a run the route of which contained to many miles of unsatisfactory roads, but was not the choice of such a course a reflection upon the automobile club in the first instance? Then when it was decided to substitute another course, would it not have been quite as well to have avoided calling attention to the reason for the change being made? Do you think the public is likely to form a high opinion of either the automobile or the automobile club when neither of them is deemed capable of travelling on, over or through a muddy road? It is just as well not to be too frank in some things, things like these particularly.

* * *

In these days of clutches, carberetters, gears, spark plugs, differentials and what not, it is indeed a wise father who knows as much as his own son.

* * *

Men have been seeking to solve the problem of perpetual motion for hundreds of years, and tens of thousands of the wisest of them have died with the problem still unsolved. But the coming of the automobile meant the passing of the perpetual motion problem, though so modest was the man who made the discovery that he was content to proclaim it in the following little advertisement tucked away in an obscure corner of a daily paper:

"Gall's touring car; the only automobile made that runs as if on wings; positively no vibration or friction. New York agents, Barkin's Auto Station, East —th street."

Of course, anything which ran as if on wings would be something out of the ordinary, but when you combine the act of running, that is to say, motion, with "positively no vibration or friction," you have there and then the impossible—perpetual motion. I have not had a chance yet so see Gall's touring car, but if the New York agent of it is not Barkin up the wrong tree I am sure he has a mighty good thing in this Gall vehicle, provided he has not claimed too much for it in his advertisement.

* * *

There are always two ways to remedy a defect in the design or construction of a motor, and it's a short cut to the wrong way.

* * *

So, Columbia University has added automobile engineering to its curriculum, eh? Well, there's more trouble ahead for us all. In the near future each year will see a host of B. M.'s—Bachelors of Motorology—turned out by Columbia and the other universities which will quickly follow the lead of the Morningside Heights institution in this matter. The blue print army will thus be insured a never failing source of recruiting, and the automobile trade will have to pay for it all. Since the dawn of the motor vehicle era five years ago, it has been estimated that the college graduate with his blue-print drawings of an automobile has cost the confiding motor and purchaser of that particular class of green goods which are made for promoters to sell and folks to buy more than $13,000,000, without the demand for this kind of goods having been exhausted. With the coming of the B. M. we may reasonably expect that the supply of blue-prints will be increased sufficiently to permit of the hard working promoters seing to it that the would be purchasers of stock in concerns which announce they are going to build the most wonderful and most scientific automobile in the world will be duly accommodated.

* * *

The tourist who sees things as they ought to be is certainly a great deal happier than he who sees them as they are, but improved roads or improved anything else would alike be impossibilities if the world was made up entirely of those in whom imagination takes the place of observation.

* * *

Shoemakers' children go barefoot. Likewise the head of the Standard Oil Company cannot bear the sight, much less the smell of a vehicle which uses any of the Standard company's products for its propulsion. Queer, isn't it? Upon every available spot in the great estate of John D. Rockefeller, amid the Pocantico Hills above Tarrytown, are large signs which bear this notice: "No motor cars allowed." Some way it seems to me that if I was the largest owner of the Standard Oil Company's securities, I'd at least be passively in favor of the use of oil as a power producer, since nothing will eventually tend so much to make this giant of the monopolies the greatest money maker of them all as will the perfecting of the explosive engine and the use of oil as fuel for steam generating. If anything can hasten the coming of this it is the automobile, which has in the last five years done more in this direction than was done in the fifty years which preceded the vogue of the mechanical carriage.

* * *

When it comes to resenting the uncomplimentary remarks of corner loafers and burly teamsters, silent contempt is responsible for many an automobilist's unblacked eye.

* * *

Over in Switzerland people go about with what they call "curse cards" in their pockets, and whenever they hear an oath they present one of these cards to the swearer and ask him to sign it. Upon the card is printed a pledge to keep from swearing for a specified time, or to pay a small fine to some charity. Nearly 40,000 of these cards have been distributed recently. It should be observed that the Swiss have only lately taken to automobiling, and they have three languages to swear in.

THE COMMENTATOR.

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FAVORABLE TO IRELAND

Bill in Parliment to Permit Cup Race Well Advanced and Probably Will Pass.

After a sudden and unexpected hitch on Tuesday, the passage by Parliament of the bill authorizing the running of the Bennett Cup race in Ireland seems certain.

The bill was introduced in Parliament by John Scott Montagu, and passed its first reading on Saturday. On Tuesday it came up for second reading, and consternation was caused by an objection made by W. J. Galloway, M. P., from South Manchester, no reason being given. On Wednesday, however, he withdrew the objection, which he stated was based on technical grounds. The bill will come up again to-day, and as absolutely no opposition is now in sight, there is every prospect that it will pass the Commons this week and the House of Lords next week.

It is quite probable that in connection with the International Cup there will be a hill climbing contest. A suitable course has been found in County Kerry, on the road from Killorglin to the top of a hill outside Tralee.

The Lord Lieutenant of Ireland is also to be asked to authorize the holding of a race to establish the kilometre record in Phœnix Park, Dublin.

Harkness and his Cup Car.

It has been positively ascertained that the cup race cars being built by H. S. Harkness is being put together at a certain establishment in West Thirty-eighth street, New York. With regard to the car, Mr. Harkness told a Motor World man on Tuesday that it will surely be completed by March 15. Then the following conversation ensued, beginning with a question by Mr. Harkness:

"What do you hear about the plans for the elimination contest?"

"Nothing. That is what every one would like to learn something about."

"Well, if they have any contest on a track I wont go in it. My car is not built for track racing. It is built for the road, and it would not go within 23 or 25 seconds as fast on a track as on a straightaway course. If they hold that road race on Long Island I will not able to run the car on the high speed—not on Long Island roads, but I can do it on the French roads."

"What do you think of the suggestion that the committee order all the candidates to go to France and have the elimination contest over there?"

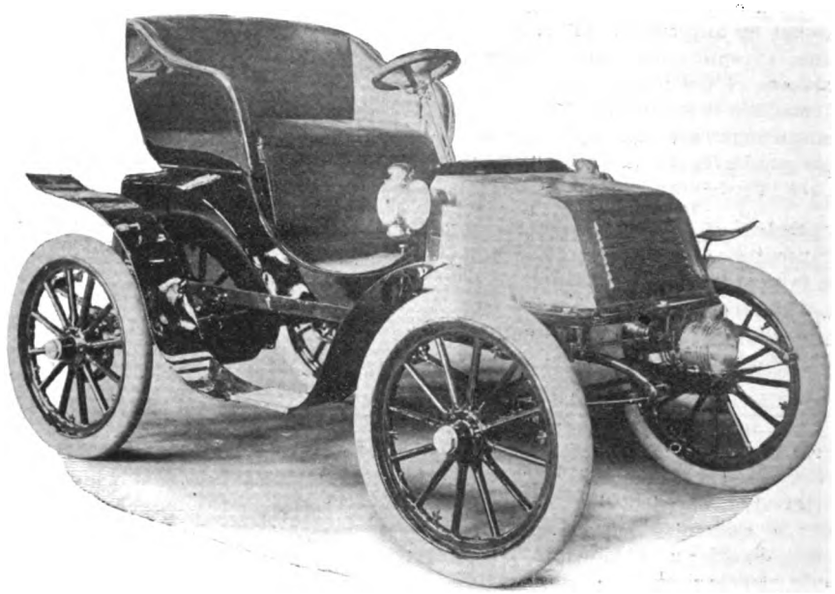
All I can say is that I am willing. I am ready for anything except a track race as a trial for a road race. That would be absurd."

Owned by Five Millionaires.

Five of the leading millionaires of America in the automobile world to-day are said to own one-quarter of a million dollars' worth of automobiles, with a total of fifty machines in the five stables. John Jacob Astor owns fifteen, of which his $17,000 Mors machine, lately purchased for April delivery, will be the most expensive. Charles Schwab has three in America, and will return with three more of the most expensive sort. Jefferson Seligman is reported to have twelve, George Gould about the same number, while W. K. Vanderbilt has five, the latter undoubtedly being the most expensive stable.

The Newest National.

That the new electric two passenger touring car first shown at the Chicago show by the National Motor Vehicle Company, Indianapolis, deserved the attention it attracted and the praise it evoked, the accompanying illustration will serve to show, an interest that was, and will be, heightened by the moderate price—$1,000.



THE NATIONAL'S NEW $1000 ELECTRIC.

As will be seen, it follows closely the lines of the gasolene cars, having a bonnetted front and being a wheel steerer. It has four speeds both ways; front lever brake on rear wheels; springs half front, full rear; artillery wheels, 32x3½; foot plunger cutout; control handle left seat, with button for reverse; the motor and differential are inclosed within one dust and waterproof case, which forms part of the rear axle housing. The batteries are divided—sixteen front, twenty rear.

Maxwell Succeeds Tivy.

The L. Maxwell Mfg. Co. has been formed at Williamsport, Pa., to undertake the manufacture of automobiles, carriages and bicycles. It succeeds the Tivy Cycle Co. Work will begin at once.

PROHIBITS NICE RACES

French Government Decides That They are not of General Interest and Upsets Plans.

Road racing in France has been dealt a severe blow by the interdiction of the Nice races. Last year the race was prohibited by the Italian Government when all the cars were ready to start; and now the French Minister of the Interior has formally declared that the Automobile Club of Nice will not be allowed to run off its projected race from Nice to Salon and back.

The interdiction is all the more singular as the club had decided to make it an alcohol event, so that apparently a propaganda in favor of the new fuel cannot always depend upon the support of the government.

In his letter to the Prefect the Minister of the Interior states that he cannot give permission unless the races have a "general interest," and he also applies another reservation in terms so ambiguous that they may mean anything. To give them the most liberal rendering, it would appear that the government is only disposed to sanction races which have come to be regarded as annual events, and only when they offer an interest for the development of automobilism generally. Of course, this does not commit the government to anything, as its ideas of what is necessary for the interest of the industry may not be the same as those of the makers themselves; and it is to be feared that very few races will be authorized in France during the present year.

The first week in April will be observed as "show week" by Indianapolis, Ind., dealers. Four of them—H. T. Hearsey Co., C. G. Fisher Automobile Co., Conrad Mueller and S. W. Elston—will keep open house. Special efforts will be made to draw the public to the stores, where the latest models will be displayed.

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FAVORS MECHANICAL INLETS

Longridge Does so Unreservedly and Criticises Cylinder Modifications Adopted by Some.

"The extended use of mechanical inlet valves in the motors of 1903 has received frequent notice in the press. But there has been a somewhat obvious tendency to abstain from criticism, to withhold judgment, and await the results of experience. I see no reason for this policy of reserve. Mechanically operated valves were bound to come, and it is equally certain that they have come to stay," says Captain Longridge in The Autocar.

"There can be no doubt of the superiority of the mechanical over the automatic valve, and this is the reason for its advent and for its stay. But in the matter of present designs and existing applications, as portrayed in the recent shows, there is scope for both criticism and doubt as to permanence. To introduce the mechanical valve is a step forward, but to accompany it with such modifications of cylinder design as are distinctly opposed to good practice is a pace to the rear. It is to mix evil with good and to counterbalance the advantage of prompt and certain valve action by a disadvantage affecting the power of the motor. It is in this respect that the motors of 1903 appear open to criticism.

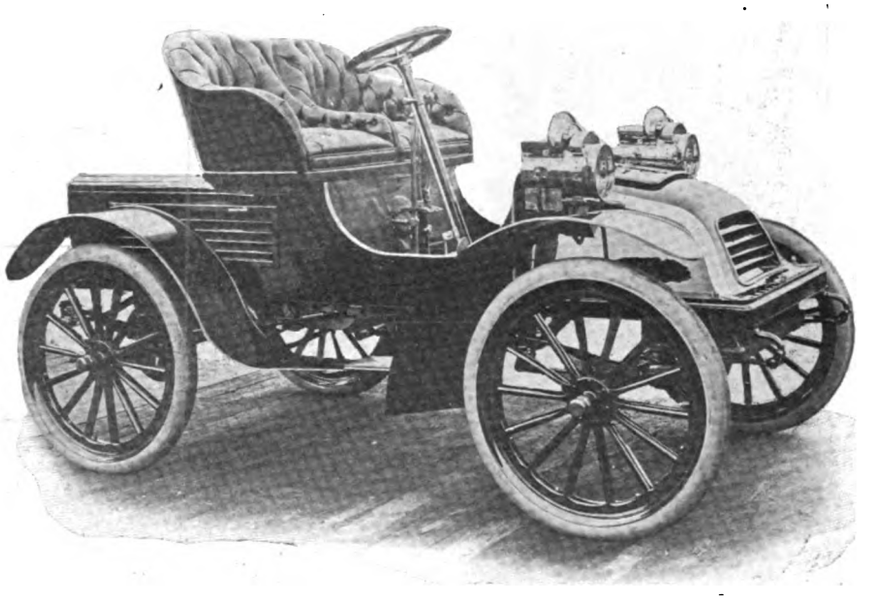
"With rare exceptions—notably, the Maudslay and the Mercedes 1903 type—all this year's engines fitted with mechanical valves have adopted this improvement at the expense of increased irregularity in the shape of the combustion chamber and of enlarged area of cooling surface. For these results attend the introduction, seen in most cases, of valve boxes and ports on both sides of the cylinder head. This modification of design is, no doubt, due to a desire to keep down the height of the motor, and by introducing symmetry to build a pretty engine.

"The result cannot but be prejudicial to combustion and the operation of the motor. A leading rule in gas engine design is to reduce to a minimum the area of cooling surface in contact with the hot gases. For this reason the combustion chamber should have a minimum surface for its volume, and as regular a form as possible. This is no purely theoretical rule, nor is it limited to gas engines. It applies to all internal combustion engines, and its influence or efficiency is abundantly proved by experience. The observation of this principle is perhaps of special importance in the case of gasolene motors. Gasolene mixtures are slow burning, and the cooling effect of increased wall area must tend to produce slower flame propagation and lower temperature, and, therefore, loss of power. A few makers, such as the designers of the new Mercedes, have evidently appreciated the influence of the explosion chamber on combustion, and have recognized that for this and perhaps other reasons valves are best placed directly in the head of the cylinder.

"Whatever may be the experience of others, I believe that these makers will have no cause to find mechanical valves anything but distinct improvements on automatic action. In connection with valves, another improvement is noticeable in some motors—that is, a combination in which both the valve and its seat are detachable from the cylinder, thereby giving greater facilities for grinding-in operations."

The $1000 Beauty From Belvidere.

When it was first announced that a concern of the resources of the National Sewing Machine Co., of Belvidere, Ill., was about to embark in the automobile business, it was taken for granted that the product would be of a kind to bear watching. The car has been a long time in coming, but it is here at last, and, as the accompanying illustration attests, it is an inviting creation. It will be styled the Eldredge.



ELDREDGE FOUR-CYLINDER, 20 H. P. GASOLENE CAR.

As will be seen, it is a two passenger vehicle and contains a four cylinder engine, stroke and bore of which is 3¾ by 4 inches, developing 12 horsepower at 800 revolutions per minute, and 20 horsepower, at 1,800 revolutions per minute. From this it can be seen that the motor is an unusually powerful one for this type of car. The transmission is of the slide gear type, driving direct on the high speed. The usual three speeds forward and the reverse is obtained, but the car is intended to be driven on the high speed most of the time, governing by throttle. The car is wheel steering, weighs 1,500 pounds, has a wheel base of about seventy inches and will list at $1,000.

Everything, with the exception of tires and ignition, is made by the company at their enormous plant. They do not expect to turn out many this year; but, if the sale of the car comes up to their expectations, they are likely to be an important factor in the trade next year.

HALSEY'S NEVER-DIE BATTERY

New Jersey Lawyer Enters the List With Edison and Explains his Wonder-Worker.

Another epoch marking battery has seen the light. It is the invention of a Newark, N. J., man, Halsey by name, who has been at work on it for four years.

"Stripped of technicalities, the lawyer's battery is nothing more than an ordinary battery, in which the carbon disk is made to revolve in the sulphuric acid and water," it is stated. "The zinc plates are, as in the common batteries, stationary. From the disk the element of power is taken by brushes against which it revolves. These connect with posts through which wires are passed leading to the motor."

Contradictory as it may appear, the motor run by the battery in turn revolves the disks by which the sustained power is furnished. This was explained by Mr. Halsey:

"There is as much power in all primary batteries as in mine," he said. "The only difference is it does not last. The ordinary battery will make an electric light, it will run a motor, but for a few minutes only. It is this short lived power that I use. In each cell the carbon disks are cogged, and they fit into cogwheels at the top of the cell. In a chain of cells the cogwheels are joined by a rod. When the current is first turned on there is power enough to turn the wheels of the motor for several seconds. This, of course, turns the cogwheels, which produces the sustained power. The force of the battery therefore never dies out.

"The whole idea is simply explained thus: The primary battery which operates a doorbell lasts, say, for six months. I simply cut its life down to six or seven hours by the revolving brushes, gaining, therefore, so much more power."

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MAN AND MACHINE

Intelligence From one Necessary if Efficiency is Expected From the Other.

Much is expected of a machine. It is a thing of iron or steel, free from the weaknesses that flesh is heir to, tireless, proof against accidents, able to go on forever and anon. A little oil, a little attention, a little intelligence—these given, it will rise superior to failure.

But even the unmechanical mind grasps the fact that these little things are necessary if the machine be expected to properly perform its duties. The ill kept tool is a byword and a hissing in the mouth of expert and layman alike. As a laborer is worthy of his hire, so a piece of machinery is entitled to as much attention as will keep it fit for the work it is called upon to do. Then, and then only, can there be any assurance that the work will be done, and well done.

If the horse drawn vehicle is turned to, an equal—nay, a greater—solicitude is expressed, and the limitations of the equine are given most careful consideration. He must be well fed and watered, protected from the heat and cold, spared fatigue at whatever cost. He is driven carefully and never too far. If it is desired to make a long journey the horse is crossed from the eligible list. Some other mode of travel is adopted, and this without a thought derogatory to the four-footed beast. He simply is not in the long distance class; and if constant and extended use must be made of some horse, more than one is maintained, or hired in emergency cases.

When it comes to the automobile, however, the matter is viewed in an entirely different light.

With it the endurance and reliability of the machine is required quite as a matter of course, just as the limitations of the horse are left out of the case, naturally and without hesitation. And this is looked for without a return in the shape of the intelligent care that a machine must and does get.

The manufacturer who sends out a piece of machinery for installation in a factory knows that it goes into good hands—those of men experienced and in the custom of operating the most complicated, as well as delicate tools. They are men who have spent years at this sort of work, beginning with an apprenticeship when mere boys, and gradually working up until they are accounted fit to be entrusted with the most difficult classes of work. These men, if any, would know how to install a new tool and operate it to advantage, without any further assistance than is furnished by the printed descriptions and instructions always furnished with machinery.

But no maker stops at this if the machine is anything out of the ordinary. He sends a man with it to see that it is set up right and to "break in" the man who is to operate it. Not until the latter is deemed proficient is he trusted to do the work alone, and only then does his preceptor depart, to repeat the work at some other factory.

With the automobile there exists some reluctance to classing it as a machine. Instead, it is viewed in much the same light as a horse. A person of ordinary intelligence can drive a nag of well regulated habits after a few lessons, and he runs no great danger of getting into trouble during his novitiate if he keeps his wits about him. Ergo, he should be able to do the same with an automobile, the motor vehicle being the counterpart of the horse drawn one, and its natural rival.

The fact is frequently lost sight of that the automobile is much more than this. It is a machine, and although apparently a very complicated one, its principles at least are very simple and easy to understand.



"IN THE GRAY SHADOWS OF THE EVENING."

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Being a machine, it must be treated with some intelligence. It gives the best results when it is tuned up to concert pitch, i. e., when it is in perfect order. Any falling off from this ideal state is visited by a loss in efficiency—the greater the fall the more pronounced the loss.

Some users understand this and govern themselves accordingly. Mindful of the old adage, they take the stitch in time—lubricate when necessary, see that all nuts, bolts and connections are tight, all adjustments made, deleterious substances of every kind removed from the working parts. If something goes wrong in spite of these precautions—and they may properly be regarded in the same light as accident insurance—they are able to bring sharpened wits to the task of diagnosing the case, and nine times out of ten cope with it successfully.

Intuition is a quality that is capable of cultivation. The autoist learns to sharpen his by taking note of past happenings, of making a mental memorandum of each mishap, of pondering on its cause and remedy, of keeping on the alert for their recurrence. He soon makes the discovery that the motor never stops without a cause; and, furthermore, that such stop, or even a loss of efficiency, is never unheralded. The false chord can always be detected by the ear attuned, the premonition of trouble had by the mentally alert. A slipping clutch, a non-exploding cylinder, a clogged pipe—these and a hundred other occurrences that are Sanscrit to the uninitiated are deciphered without trouble by the autoist who knows his book.

At the present time the automobile world is on the threshold of a new era. The old stage of experimentation is past, the last pages have been written, the volume closed and laid away. The motor vehicle is no longer a toy, a vehicle for enthusiastic sportsmen to take up, play with and ultimately drop. The sport no less than the pastime will continue to flourish, and must always have a place. But the use of the automobile as a transportation vehicle, a means of annihilating distance, is about to undergo an immense extension, to pass into the hands of thousands of men who hitherto have regarded it with indifference or curiosity or even hostility. This is to come about by reason of the ever growing belief in the possibilities of the new vehicle, and the knowledge that it is really "making good." The world has outgrown the old methods of horse transportation, and is ready to admit the fact. Coincident with this admission—brought about in part by it, as a matter of fact—is the knowledge that the something better, so long looked for and ardently desired, is here and ready for utilization. Put flint and steel and tinder together and a blaze will result. The juxtaposition of a freely acknowledged want and an ideal means of filling it renders the result a foregone conclusion.

In view of this boundless extension of the motor vehicle's use, this approaching worldwide use of the once derided, cumbersome, complicated, unreliable self-propelled car, the method of its future treatment should receive some of the attention that it merits.

The pleasant fiction that the automobile is a carriage and not a machine has served its purpose. Some pills require sugar coating, but it is because they are abominably tasted, and might not be taken at all if they were not first sugared. Time was when the automobile needed the pleasant accompaniment of the product of the cane; when the mere thought of the experience in store for the autoist would have occasioned as violent a retching as might have followed the taking of a pill sans sugar. But such time is no more. The automobile pellet needs no disguise, requires to sail under no false colors. As it is now it is its own recommendation, and none other is needed.

By all means, therefore, let the automobile go forth as a machine. The autoist who expects any motor vehicle except an electric to run in season and out on the push button theory, and is unwilling to learn its mechanism, should either engage a chauffeur-mecanicien or abstain from the more than doubtful pleasure of owning and operating one. He would come to his senses sooner or later anyway, so let him go, and peace be with him.

In his place there will be found the user who wants the best and simplest mechanism that mortal skill can produce. And having got it he will use the sense that God gave him to treat it intelligently, in order that he may reap the fullest possible benefit from it.

As a Battering Ram.

Ye tournament at joust was revived in a most modern and up-to-date fashion on Fifth avenue, New York, recently, and manufacturers will please take notice of what may be required of their cars and build accordingly.

In the gray of the early evening the jehu of a horse cab and the chaffeur of an electric cab approached each other, head on, at Forty-seventh street. Neither he who guided the horse nor he who held the steering lever was willing to give way and turn aside to let the other pass. The electric cab was empty, while the cab behind the horse contained a passenger, in the person of a prominent lawyer. These conditions made no difference whatever to the men in charge of the vehicles. Each continued on his course as if they were under the impulse of a hereditary hatred and the cabs came together with a crash. The two cabbies then jumped down and went for one another in true prize ring style. After one round at fistcuffs there was another one at ramming. The automobile operator sprang back to his cab and drove it into the cab with such force that it and another cab behind it were both forced up on the sidewalk. Then the electric was backed a bit and sent forward for another charge, ramming in on the horse drawn cab like a torpedo boat destroyer. This time the cab, horse and all, was jumped backward several feet and the electric kept on pushing it until a policeman who had been summoned by the lawyer passenger ended the battle. A signal victory for the automobile over the horse-drawn cab as a ramming vehicle had been gained, however, and the chauffeur paid his fine the next morning, satisfied that he had vindicated the cause of the motor vehicle as a public hack.

Rockefeller's Ninth Purchase.

It is frequently remarked with a considerable amount of flippancy that the purchaser pays for the experiments conducted by the maker. The early product of the latter is far from perfect. The user generally learns this to his cost, and changes from one car to another in the endeavor to obtain one that will give him satisfaction.

It is seldom that a maker is able to sell a number of cars in succession. In obtaining from William Rockefeller an order for his ninth Packard car, therefore, the Packard Motor Car Co. finds ample cause for self-congratulation. The sale was made just after the New York show, and the car concerned was one of the new four cylinder Packards. For this the price paid was $8,160, a special design of body being specified.

The Packard was not Mr. Rockefeller's first automobile. He had used several different makes before he purchased a Packard, but once the latter found a place in his stable he has confined himself to it. He has for some time been in the habit of purchasing them in pairs. As stated, the new car, which was one of the sensations of the show, is Mr. Rockefeller's ninth Packard.

Much-Handled French Cars.

Just as an illustration of the way French cars are handled before they get into this country and the number of commissions there are on their price by the time they get here, Norris N. Mason, the new American manager for A. Clement, tells how the American Georges Richard Co. got their cars when he was a member of it and the company had the exclusive control of American sales. He said: "We dealt directly with Overton & Mann, of London. They control the Georges Richard output through having bought in France all the cars secured by other agents there. Lejay is the representative of Overton & Mann in Paris, but he does not deal direct with the factory. He buys through Ernest Cuenod and, I think, there is still some one else between Cuenod and the factory."

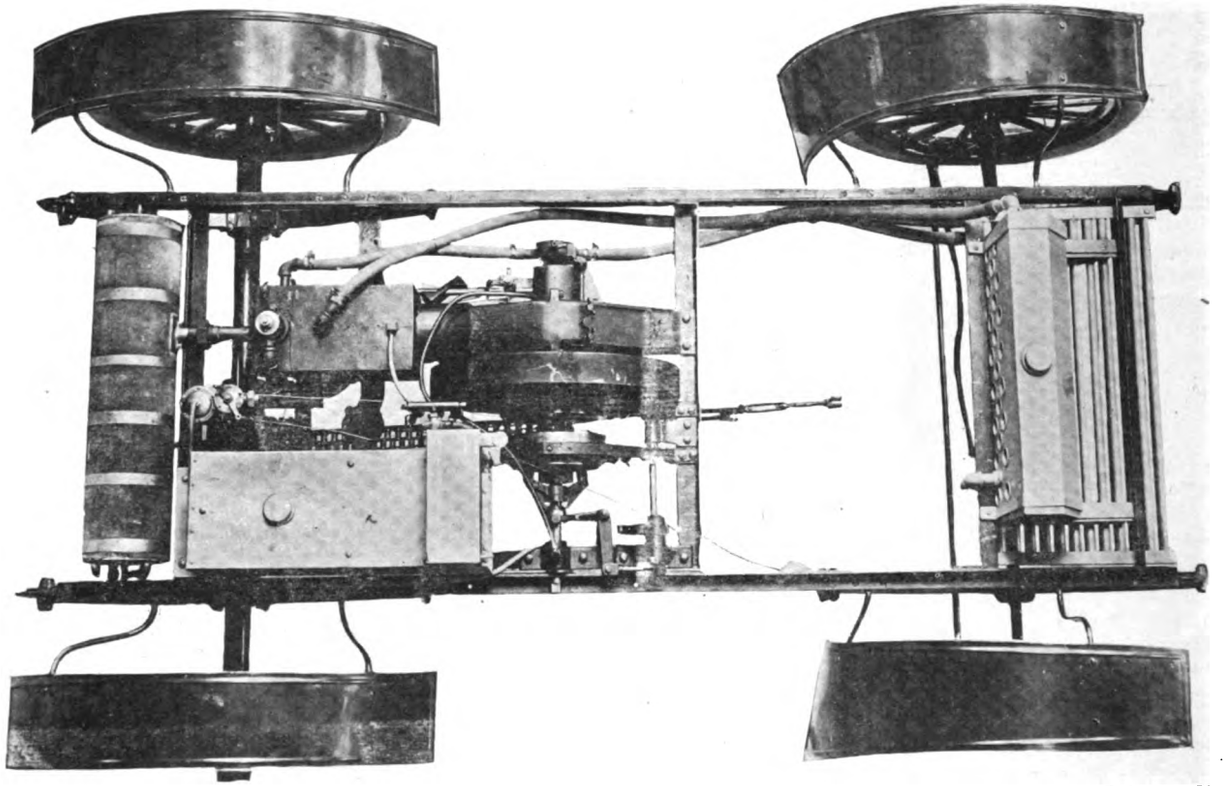
This year the Paris-Madrid race is to have a woman competitor. The aspirant for speed honors is Mme. Lockert, the proprietress of La Chauffeur, who is no stranger to the French automobile public, having taken part in the touring section of the Paris-Vienna journey last year.

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AMERICAN'S GOOD POINTS

Cleveland Concern's Gasolene Car's Chassis—Some of its Special Features.

Among the cars of recent origin that have met with a favorable reception is the American, manufactured by the American Motor Carriage Co., Cleveland, Ohio. The car was first put on the market commercially early in 1902. For the present season it has been materially improved, and has been placed in the hands of well known concerns in nearly all the leading cities. Of the estimated factory output of 1,000 complete cars 500 have been sold.



The American Model A car is what is usually termed a light touring car. It is a two passenger vehicle, selling at $1,000 and having a radius of 175 miles.

The chassis, shown in he illustration, is constructed with a special angle iron frame, giving the greatest strength with the least weight, which carries the entire mechanism. The single cylinder water cooled motor of 7 horsepower is hung centrally. The transmission, an adaptation of the planetary system, gives two speeds forward and one reverse, the drive being direct on the high speed. All bearings are bushed with a special phosphor bronze, and receive perfect lubrication by gravity feed from a large copper tank, through a system of sight feed oil valves. The transmission and crank pin receive lubrication through the centre of the crank shaft. The same lever that operates the electric switch starts and stops the flow of oil.

The contact is of original design, operating with a plunger in an airtight case, insuring a perfect protection from dust, and is so controlled by a governor that the spark is advanced and retarded automatically. Eight cells of batteries are provided, four being held as a reserve. A Longuemare carburetter is used, giving a mixture that insures perfect combustion under all conditions, and is at all times under control of the operator by means of a foot lever connected with the throttle. A copper gasolene tank is located near the carburetter, obviating the necessity of a long connecting tube, hence avoiding the danger of leaks. The water tank and radiating coil are located in the front hood of the body, while the water is circulated by a positive gear pump, keyed direct to a stud in the end of the crank shaft.

The car is controlled by a hand lever, giving the two speeds forward, while a foot lever operates the reverse, and is conveniently located so that it may be used as an emergency brake. The engine is always under perfect control with the throttle, while powerful brakes are located on each rear wheel. The steering gear is equipped with a large expanding wood rimmed hand wheel, so arranged that it may be easily handled under all conditions.

Especially noticeable in this vehicle are the accessibility of all the parts, the extreme simplicity of construction, the cars exercised in points of detail. In the construction only the best of materials and parts are used, and the claim is made for great reliability, durability and ease and satisfaction in operation.

U. S. Long Distance cars will be handled in Poughkeepsie, N. Y., this year by H. Von der Linden. He has just acquired the agency, and will stock these cars at his Market street wareroom.

Miller Takes on Two Foreign Accounts.

Brampton chains will be handled in this country. Charles E. Miller, No. 97 Reade street, New York, has just been appointed sole United States representative of the makers, Brampton Bros., Ltd., Birmingham, England, and will carry a stock for replacement on imported automobiles. Attractive quotations will also be made to American manufacturers who desire to adopt these chains.

Another recent acquisition of the Miller house is the agency for the Almond Tire Mandril Co. The concern's mandril is used in the vulcanization and repairing of double tube tires. They are inexpensive to operate, and will be found of great service to repairers.

What Made the Chicago Show!

A wealth of rich yellow light streams through the windows of the skylight, and those above the balconies, which, together with the prevailing black and automobile red finish of the several hundred cars, of many types and styles, gives to this exhibition a luxuriousness of tone and a certain soberness and solidity of character never before attained by any automobile or bicycle exhibition in the Western Hemisphere.—From The Automobile.

The Week's Exports.

Argentine Republic.—Three cases motor machinery, $345.

London.—Three cases motor vehicles and material, $135.

Liverpool.—Seven cases motor vehicles, $1,370.

Mexico.—One case motor vehicles, $539; six cases motor vehicles, $1,410.

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FLOOD OF LEGISLATION

The Seven Bills Before the Bay State Legislature —Opposition now United.

On the summit of Beacon Hill, where the dead and gone worthies of the old Bay State look down on their pygmy successors, a battle royal is in progress over automobiles. Autophobes and autoists have locked horns. As stated last week, no less than seven measures for the regulation of automobiles are now before the Massachusetts legislature's Committee on Roads and Bridges, and the probabilities are that hearings will be announced for February 24 and 25, although those dates have not yet been decided definitely.

Of these bills those of Henry L. Higginson, shutting out all autos capable of making more than twenty miles an hour; that of the Boston Automobile Dealers' Association, that of the Massachusetts Automobile Club and that of Colonel James T. Soutter, for the New England Automobile Association, have already been referred to in these columns. The first mentioned is savagely hostile, while the other three are favorable to the automobile.

A summary of the new bills is given below:

House 936—Petition of Robert M. Shaw. Requires a license from the chief of the district police for every person operating an 'automobile or other vehicle' on a public way. Persons operating cars and trains for railroads or railways are excepted, but no mention is made of persons driving horse drawn vehicles; if licensee is convicted of an offence relating to automobiles his license is voided and he may not receive another thereafter; license fee to be $1, penalty $50 and three months' imprisonment.

House 937—Petition of Frank J. Stanley: Amends act of last year by cutting down speed limit from ten and fifteen miles to twelve and eight.

House 933—Petition of Thomas J. Grady: Requires automobile owners to register machines with the chief of the district police; makes it unlawful to operate an unregistered machine; places fee at $1; the registration to be voided if person registering is convicted of violation of law; machines numbered by chief of district police and to bear the number of a size directed by him, unnumbered machines being contrary to law; autos owned outside the State to be registered in State where owner resides and to be legibly numbered, but if from a State where no provision is made for registering it must be registered in Massachusetts in order to make its use here lawful; requires brakes, horn or other signal, with two lamps on the sides; ten-mile limit for thickly settled parts of cities; park provisions remain intact; no city or town to establish any regulation inconsistent with State law, except that speedways may be separately controlled; chauffeurs must be licensed, fee $1, chief of district police to examine as to "qualifications, character and habits," and to be authorized to revoke license for misconduct; licensee to wear his number legibly displayed on his cap or hat; stop for frightened horses, slow down for cross streets where travel is frequent.

The arrangement of a truce between the Boston Dealers' Association and the New England Automobile Association places the opposition to adverse legislation on a better footing. There was a conference last week between Elliott C. Lee, Frederick Tudor, jr., and George R. Alley, on the part of the Massachusetts Automobile Club, and W. E. Eldridge, Harry Fosdick, S. K. Dingle, H. E. Marvel and A. J. Coburn, on the part of the dealers, and under a new arrangement is is likely that the legislation proposed by both factions will be looked after by the same counsel. Bordman Hall, who as a lawyer member has been taking the lead in legislative work, moved that the club accept ex-Judge Dewey and Robert Southworth as its legislative agents. These are the gentlemen who have been acting on behalf of the dealers. The club voted to leave the matter to its legislative committee, but it is likely that there will be no further differences over the question of counsel.

Four of the automobile bills have been set down for hearing before the Committee on Roads and Bridges at the State House on March 6. These are the two licensing bills of Thomas J. Grady and Robert M. Shaw, and the bills proposed by Robert Clement and Colonel James T. Soutter on behalf of the automobile clubmen to extend the speed limit. No date has been set for hearing the Higginson bill or the bill put in by the Automobile Dealers' Association.

Gave Governor a Ride.

There is nothing like having a friend at court. In view of the flood of automobile legislation in Massachusetts, the importance of having the Governor familiar with the behavior of an automobile is obvious. Last week, therefore, Governor Bates was approached and readily consented to take a ride. He was placed in a Winton touring car, and, in company with Judge Dewey, Harry Fosdick and a chauffeur, was taken out Commonwealth avenue to Auburndale, Boston's show suburban road. Object lessons were given him in the manipulation of a powerful car, and at the conclusion of the ride the Governor expressed himself pleased as well as astonished at his experience.

More Chicago Assininity.

As befits the Windy City, Chicago has gone the limit in autophobe legislation. Alderman Bellfuss will introduce an ordinance requiring the placing of a safety appliance on the front of every automobile. Fenders and pilots are mentioned as safety appliances.

Georgia Legislator Goes the Limit.

In the Georgia legislature recently a bill was introduced prohibiting the driving of automobiles on the public roads. There is no likelihood of its passage.

TRUCE IN BOSTON WAR

The Dissenting Organizations Reach an Agreement and First Show Opens Harmoniously.

An adjustment of the differences between the rival Boston organizations, the Boston Dealers' Association and the New England Automobile Association, has been arrived at. Several meetings were held last week for the purpose of promoting harmony. The upshot of it was a virtual agreement to bury the hatchet and work on a common basis.

It was too late to combine the two shows, but a plan has been agreed to which differentiates one from the other so completely that they can no longer be regarded as rivals. The show planned under the auspices of the new organization, the New England Automobile Association, to be given this week from Tuesday through Saturday, in the main hall of Mechanics' Building, will take the form of an automobile carnival, at which all kinds of tricks and contests and demonstrations will occupy the programme to the exclusion of any mere still-life exhibition of vehicles. The Massachusetts Automobile Club will conduct it, club members will use their own machines, and the local dealers have joined in with them to assist with demonstration vehicles. The affair will be, therefore, not so much an exhibit of the latest models of machines as a five day object lesson in what the automobile will do, and the ease with which it may be managed and controlled. Brake tests, grade climbing and various other stunts are to be included, and it is likely that some of the legislators who are to pass on the automobile bills now in the hands of a committee will be invited down to get the benefit of the demonstrations.

While the dealers join in with the club to make the week's carnival a "go," the club, on the other hand, has formally given its approved of the dealers' show set for the week of March 16, in Symphony Hall, and that show will be primarily the exhibition of latest models of all the automobiles purchasable at Boston agencies.

In the presence of several thousand people, many of them prominent in society, the "Automobile Carnival and Exhibition" was opened at Boston on Tuesday night.

The evening programme included fancy riding and obstacle and slow races. Robert Ross successfully performed on a tether board and rode among ninepins placed to embarrass him. A big Pope-Robinson touring car was also driven on the tether board. There were four competitors in the slow race, which was won by Mr. Peabody.

The exhibition will continue throughout the week, and frequent changes of programme will be made.

No less than 230 entries have been received for the Paris-Madrid race. This is considerably in excess of the number entered in any previous event.

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How the Colony is Growing.

In the neighborhood of Thirty-eighth and Thirty-ninth streets there are now so many establishments that there is prospect of this locality becoming the busiest automobile centre in the city. The Electric Vehicle Co. now has its sample cars in its new place at 134-138 West Thirty-ninth street, and the entire block looks like an automobile row because of the spacious, showy front of this store. A few doors below the Electric Vehicle place, at 146-148, a new interior is being built for the Smith & Mortension Co., now at 150 West Thirty-eighth street. They expect to move in some time this week.

The new store has a frontage of 55 feet, a depth of 85 feet and will be two stories in height. With this change the Smith & Mortensen concern will take on some new lines. The Knox Automobile Co. will have a part of the place as a sub-tenant, and show Knoxmobiles, while the Whitney, the Kensington and probably the Automotor lines will be handled by the Smith & Mortensen Co. The Kensingtons they will sell through an arrangement with Homan & Schulz.

Peerlesses and the Bankers' Palace.

C. G. Wridgway, of the Banker Brothers' "palace," in West Thirty-eighth street, New York, is a very busy man these days. He returned on Monday from a trip to the Peerless factory at Cleveland, where everything is being rushed, and he says that Banker Brothers will take practically the entire output of Peerless cars for 1903. On the two floors of the store there are sixteen of the two-cylinder touneau cars, and of these only five are unsold. Six of these cars have been sold within a week, Jesse Lewisohn and his brother Oscar being two of the buyers. The five left can be delivered on the spot for spot cash. The demand for the four cylinder cars is not so great as for the two cylinder, but they are being turned out more slowly and orders for them taken now are for delivery in May or June. The Peerless racing car, Manager Wridgway says, will surely be finished by April 1. The branch place of Banker Brothers at 50 West Forty-third street, will be retained for storing and repairing, and also will be used as a painting shop. A considerable business in renting Peerless cars is being done.

To Satisfy Insistent Customers.

A neat way of managing so as to satisfy customers with deliveries is followed by Homan & Schulz, the pushing New York agents for Northern runabouts at 134 West Thirty-eighth street. Shipments are now being made very regularly from the Northern factory, but Homan & Schulz are selling them as fast as they can get them, and if it was not for good management would often be without any new model to show.

The firm makes a rule to keep four new cars unsold on the floor of its store. When a customer buys a car he is told that he can get it in ten days or two weeks, depending upon the way sales are going and the way shipments are arriving. As a rule this is all a man wants, but if a man insists upon having a car at once he is accommodated by turning over to him one of the four held in reserve. Sometimes a buyer accepts a promise of delivery two weeks later and comes back in a day or two to announce that he has changed his mind and wants the vehicle for use on Sunday. Instead of being obliged to turn him away, the concern pleases him by handing over one of the reserves. The reserve sometimes dwindles to three or two, but it is never allowed to happen that there is not one car on hand ready for an insistent cash customer. It is simply a matter of diplomacy in booking orders so as to always provide for the reserve stock. Homan & Schulz express themselves as highly delighted with the new carburetter in the 1903 Northern, which, they say, "works like a charm!"

How Oldsmobiles are Sold.

"How do you deliver cars to your customers? That is, do you let them go to the freight depot and get them, or do you take them to their homes or place of storing?"

"Neither, exactly," replied R. M. Owen, manager of the Oldsmobile Co.'s place, at No. 138 West Thirty-eighth street, New York. "We never deliver a car until after we have tested it ourselves, and we never relinquish possession of one until the last dollar of the purchase price has been paid and we are sure the buyer thoroughly understands the management of it. We are getting about a carload of cars a week now. They come six in a car, all set up, ready to be charged and run. After we get notice of their arrival we send a couple of men up to the depot, usually Thirty-third street and Eleventh avenue, with five gallons of gasolene, which is enough to run six cars from there to the store here. In a couple of hours they are all here, and then the buyers who are waiting for them are notified, but not until after every car has been overhauled. The best record of sales we have had this winter is seven in one day."

Deal for Darracqs That Failed.

Darracq cars are not to be sold at the Automobile Evchange and Storage Co., 133-139 West Thirty-eighth street, New York. The Darracq store of F. A. La Roche, at 652 Hudson street, is the headquarters in this country for the crack hill climbers. Manager Robinson of the exchange was negotiating to represent the Darracq, but the deal has fallen through, and Mr. Robinson is now looking for some good American car to sell. He has taken on the Orleans French car, which here will be sold as the King of Belgian car. Since the alterations have been completed, the establishment of the new company presents a very attractive appearance, and a good business in second hand cars is being done.

When one Chauffeur is Happy.

It now appears that it is a Peerless car which Police Commissioner Greene has been using for his weekly peering excursions to police stations and Raines law hotels. The car is one of the 1903, two-cylinder models, with a green touneau body and, as has been published, it has acquitted itself creditably so far as speeding goes. It is a great opportunity for an automobile concern to show the efficiency of its car when it has the Commissioner of Police for a passenger, and a perfect picnic for the chauffeur in charge, who can then "let her flicker" without fear of police interference. The car used by the police commisisoner is hired in in the ordinary way at the Banker Brothers' "palace," at 141 West Thirty-eighth street, and the chauffeur who operates it always makes it a point to get the commissioner or the accompanying inspector on the front seat, where he will be in plain view. Thus guarded the chauffer is only too happy when the commissioner admits being in a hurry, for he is then delighted to get up speed and take the chances of arrest.

Carried Four up Fort Lee.

Of the numerous hills that uprear their heads in the vicinity of New York none is more famous than that at Fort Lee, on the New Jersey side of the Hudson River, opposite One Hundred and Twenty Fifth street. Long, steep and with a surface none too good, it is calculated to test the power of any car, and has in the past been a favorite trying out ground.

During show week particularly it is visited by operators who wish to prove the hill climbing ability of their cars. Many succeed in ascending it, but not a few fail ignominiously.

By conquering it with ease the Cadillac last week made good its claim to efficiency, and may be said to have made its Eastern debut in an impressive fashion. On Saturday last a Cadillac, with tonneau body and laden with four passengers averaging 175 pounds, was sent up the hill without a falter. The occupants were J. F. Cutting, of the Cadillac Co., of New York; two prospective customers and a chauffeur.

How the French Creeps in.

"Defense de fumer" is the sign that encounters the eye at the Barry & Hayes establishment and other stores where French workmen are employed. On the same wall is the English version of the warning or command, "No smoking." There are few visitors to the garage who do not understand one or the other admonition.

Cadillacs in New York.

The report that John Wanamaker would handle the Cadillac gasolene cars at his two stores proves to be only half true. It is the Philadelphia establishment only that will do so. In this city the Cadillac Co., of New York, has secured the agency, and will sell the car at its new store, No. 151 West Thirty-eigth street.

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PAINTING THE CAR

Not Such a Simple Task as it may Seem — The Care and Materials Necessary.

"Ability to determine what is really good economy is an important part of the carriage painter's trade. Good economy dictates the purchase and use of the best brushes to be had. The best costs but a comparatively small advance over the poorer sort, and better and faster work can always be accomplished with the good tool. Besides, the best furnishes a greater term of service," says The Hub.

"Pitting of varnish not infrequently comes from varnishing over a surface of color not quite dry. Better postpone varnishing until the color is absolutely dry and thus escape the pitting deviltry.

"The premature display of fire checks upon the finished surface can with accuracy be attributed, generally speaking, to coating up a surface too rapidly and not giving each coat of paint or color adequate time to dry. Fire checks may be drowned out with a fresh application of varnish, but in due time they may be expected to reassert their presence.

"A few years ago much was heard of the eggshell gloss coat, but the deceptive nature of these coats has been freely demonstrated, with the result that the eggshell gloss has in the main been severely let alone. In the economy of the modern system of quick painting the eggshell gloss has no place. It is the cause of surface disorders in plenty.

"A handsome belt panel color for a light delivery wagon is deep buff. Gold or aluminum letters and ornamental effects on this color, with red or green shadings, yield dignified and aristocratic conception in color. Deep buff is made of white, yellow and red, the depth of the buff being regulated by the greater or less proportion of yellow and red used.

"The velvet or wool sponge that has a fine, soft, fleecy texture, but withal tough and leathery in its fibre, is the only economical sponge, regardless of the cost, for the average painter to buy.

"Even to-day the paint shop visitor does not need to go way back to find the pig trough style of brush holder, into which paint and color brushes, including camel's hair brushes, are thrust indiscriminately. This way of keeping brushes ought to be obsolete, and, as a matter of fact, is obsolete in the up to date shop. All brushes should be hung upon wire supports and kept in dust proof compartments.

"The leading factory finishers invariably strain their varnish before using, and if these experts find the practice conducive to the best results the jobbing shop painter may well accept it as a good one to follow. Straining the varnish before using is an important safeguard.

"For use upon an old vehicle, such as often rumbles into the paint shop during the spring months, with gaping checks about the hubs and felloes, etc., a putty that dries hard, but remains elastic and grips fast with bulldog tenacity, is made of four parts whiting, one part dry white lead and one-fourth part litharge, these pigments being mixed to an easy handling consistency with boiled linseed oil.

"When sponges and chamois skins are used they should be washed out in soap and water and then carefully rinsed in clean water until all traces of the soap are removed. Then dry out gradually and naturally. If dried too quickly by stove or steam heat the skin gets harsh and breaks easily. The old witchcraft notion that washing sponges and chamois skins in soap and water is dangerous has been buried as securely as Captain Kidd's treasures.

"The party who shakes varnish before using—and you will find them quite numerous—deserves a like treatment. Never shake varnish. Take it from the can in a normal condition. Use it in a common sense way. Give it a chance.

"A good glazing putty may be made of white keg lead thickened with coach japan, seven parts, and hard drying finishing varnish, one part, the mass then being thinned to the proper consistency with turpentine.

"The natural pumice stone, or lava, the product of the untamed volcano, is no longer largely used in surfacing carriage work. The composition rubbing stone, uniform in texture, less easily chipped or broken, and superior in other ways, has taken its place. The composition stone rubs to a very fine surface, and that economically.

"The real worth of a glazing cover depends to a large extent upon the quality of the ground over which it is used. A perfect ground provides for a perfect glaze coat, other things being equal, and an imperfect ground invites a disordered glaze coat.

"The bulging of putty, so-called, put upon a plain basis of fact, is not due to any eruptive tendency of the pigment. Unseasoned wood causes putty to mis-shape itself after being placed in position. Moisture working below the putty ejects the pigment from its place and leads to the misapprehension that putty swells. Properly mixed, putty does not swell.

"Insufficient ventilation has ruined many a painter's health and caused a multitude of paint and varnish surfaces to go wrong. Ventilate, if it has to be done, by raising or lowering the windows. In the paint shop fresh, pure air is as necessary as paint or a painter.

"Never allow sponges and chamois skins to remain immersed in water when not in use. Dry them out and lay them away in a dust proof receptacle. Rancid and dirty shop accumulations, if allowed to settle upon the sponge and chamois equipment, work a quick and permanent injury to it.

Cheap, inferior rubbing varnish is a snare and a stumbling block to the painter who sincerely desires to make his work both comely and durable. A strictly fine, reliable rubbing varnish, regardless of the price, is in the end the most economical.

"The ring cracks on carriage running parts so common in this 'paint your buggy while you wait' age are due, as a rule, to crowding one coat of paint upon another before the first is properly dry. Lead coats should be dry from top to bottom, otherwise the whole paint structure is menaced.

"In the clean paint shop the workmen can accomplish better and quicker results than in the dirty one, with less loss of energy and avoirdupois. Why not clean the shop out at least every other day, and thereby make more money and live longer? Think it over and resolve to hereafter keep the shop a little cleaner.

"Only light reds and light wine colors look well striped with aluminum. The dark shades of red and wine color appear to bleach the aluminum until it looks like white paint, whereas the light shades reflect the aluminum at its true color and lustre.

"To eliminate the verdigris property from gold bronze and thus render it less susceptible to change from the action of atmospheric elements or to the ordinary flow of varnish mix the bronze in benzine and stand over night. The verdigris will work to the top of the mixture, and can be poured off.

"It is advisable to grease the new pencil and lay it aside for a time before using. The grease softens the hair, increases its elasticity and gives the pencil 'hang' and 'poise.' To straighten 'kinked' or frizzly pencils heat a piece of tin, run grease over it and then work the crippled pencil in this. It will straighten a badly kinked pencil or brush.

"The purchasing painter should own a hydrometer, if only to expose the shifty scion of adulteration. The turpentine that registers above 31½ degrees or below 30½ degrees is unmistakably adulterated and should be rejected. A Baume hydrometer registers pure turpentine at 31 degrees.



SWEET INNOCENCE.

Automobilist (with his eye-protectors on): "Why do you wish to give me a penny, my child?"

Unsophisticated Child: "Aren' you blind, then?"

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SWEET ON STEAM

Lecture by Cornell Professor Brings Out Interesting Points—Why Boilers Don't Explode.

On Tuesday night the members of the Automobile Club of America were invited to listen to a lecture by Professor John E. Sweet, of Cornell University, on "Steam Power for Automobiles." Professor Sweet said that he was not prepared for a lecture and he gave a detailed account of the building of an engine after designs of his own. It was an interesting recital, for the engine was a novel one in being devoid of packing boxes and having a far lesser number of working joints than most engines. It was one that developed 10 horsepower and had two cylinders, one high and one low pressure, set at right angles. He expressed it as his opinion that there was no economy in small compound engines, in none much less than 100 horsepower.

President Shattuck presided at the meeting, and he inaugurated the discussion by telling of his experience with one of the first Serpollet motor cars, eight or nine years ago. He said that Serpollet heated his boiler until the tubes were a cherry red, then said: "Now I am going to pump water into it and we will start. Climb up on the seat." Mr. Shattuck said that he had always believed that pumping cold water into a hot boiler would cause an explosion, and he climbed on the seat and sat over that boiler after saying a prayer, only because he was not going to be outdone in courage by a Frenchman. If Serpollet was going to stand by during such a crazy proceeding, he would. However, no explosion occurred and they rolled along merrily until it was desired to stop. The stop was effected by stopping the engine and putting on the brake. The vehicle came to a halt after slewing around in a complete circle. The inventor said that was the usual thing.

A discussion concerning the liability of steam boilers to explode and the danger therefrom was entered into, and the question was asked why the little Locomobile boilers never exploded. It developed that tubular boilers of this type cannot be made to explode. President Shattuck told of watching an experiment made to prove this, when a Stanley boiler was placed in one cellar and watched from another cellar until it had been run up to a pressure of 1,500 pounds. Then it was found that the tubes had expanded until the steam had forced its way out quietly and that was all. J. A. Hill told of similar experiences and said that instead of exploding boilers of this type would yield at the ends of the tubing, one tube after another giving way, until the excess pressure had been relieved, the same as through the slow working of a safety valve. Another member explained that this peculiarity was largely due to the copper shell of the boiler being heavily wound with piano wire, so that its power of resistance was much greater than that of the boiler tubes.

J. A. Hill provoked roars of laughter several times by his droll way of narrating personal experiences. He said once there seemed to be an idea that there would not be much harm done by the explosion of little boilers. He learned differently when he was a boy. He and a chum made a toy steam engine of about "four louse power." The boiler was an old copper tea kettle. One day they thought it would be great fun to explode the boiler, so they stopped up the valve (spout) and put it in the furnace of his father's wheelwright shop when all the hands were at dinner. The bellows were worked by means of a pole from outside the shop until the boiler exploded. When it did so it blew the cinders about so that all the windows were broken. Mr. Hill says he ran, but his father saw him, and after he had seen his father that night he changed his mind about the explosion of a small boiler not being a serious thing.

Mr. Scarritt—"There seems to be an idea abroad that in the future steam will be used for heavy tracking and gasolene for touring purposes. How do you think about that, professor?"

Professor Sweet—"I guess that is about right."

Mr. Hill—"Why do you think so?"

Professor Sweet—"I don't know. You can control a steam truck better than one with a gasolene motor."

Then the question was raised whether motor vehicles ever would supplant horses for general hauling work in cities. Professor Sweet said he thought they would, not entirely, but to a large extent.

Mr. Shattuck—"If they do we have got to have the roads.

Professor Sweet—"Well, all roads would last longer if used by automobiles only, and not by horses, and they would be much smoother and cleaner. This is a consideration that may be just enough to turn the balance in favor of motor trucks, as against horse-drawn vehicles."

In his preliminary remarks, before introducing Professor Sweet, Mr. Shattuck alluded to the objectionable legislation being attempted in New Jersey, and said that members of the A. C. A. were in sympathy with their New Jersey fellows in their opposition to the Scovill bill, and then referred to the vexations of the automobilists with the anti-automobilists at Albany, who generally come from Long Island. He said that the automobilists would draft amendments to the Cocks law, and that the antis would then graft on some oppressive clauses of their own, which would start the argument all over again, so that thus far nothing had been done. If the automobilists could only keep up the argument until the 1st of May, he said, the legislature would adjourn without anything having been done. He was afraid, though, that the argument could not be prolonged till then.



OLDSMOBILING IN MEXICO.

Being Built for Nourse.

A new wonder worker in the way of a big, high-powered car is being built in New York City by N. W. Schlater, formerly with the Automobile Co. of America. H. R. Nourse, a dry goods merchant, is to be the owner of the car, which may be but the first of a new line of production. It is to be of 60 rated horse power, but capable of developing ninety miles an hour. It has a four-cylinder engine and many original features. It has been in process of construction since September, and is nearly completed.

Winton touring cars will be handled in Utica, N. Y., by the Miller-Mundy Car Co. The concern expects to do a considrable business in this well known make.

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ADVENTURES ON THE ROAD

A. C. A. Members Tell of Thrilling, Amusing and Instructive Experiences.

"Danger Points in Automobiling" was the suggestive theme chosen for the "Tuesday talk" of the Automobile Club of America last week, and with President A. R. Shattuck in the chair, several of the members contributed to the stock of information, useful and amusing, previously possessed concerning accidents on the road.

At first the talk revolved about the mishaps due to punctured tires, especially those on the front wheels, and several testified to having been ditched or forced into a collision by the car suddenly swerving because of a punctured front tire. President Shattuck said that he had run for three miles, noticing a repeated bumping, before he discovered that it was due to a punctured front tire. Mr. E. B. Galleher explained that the bumping was due to the pulling in or the breaking of the valve stem, and pointed out that sudden, severe bumps caused in this way were apt to cause a spring to break, for which reason a flattened tire should be attended to at once.

George B. Adams said: "I have had one accident. I was out with a customer, and going along at a pretty good pace when he asked to go faster. I let out a little, and very soon we overturned and the car lay on its side with two wheels up in the air. We were thrown out, but not hurt. I do not know whether the wheels struck something or whether the spill was due to skidding, but am inclined to the latter belief."

Mr. Shattuck—"When it is slippery enough for a car to skid the car is not apt to overturn unless you strike suddenly a dry spot while the wheels are skidding; then if you are going fast you are apt to have a bad time. When a car is skidding in one direction it is natural to turn the steering lever in that direction, and unless you are very expert you will turn it too much and will begin to skid in the opposite direction; then the impulse is to turn back again, and this is apt to cause an upset." President Shattuck then told about his experiences with Street Cleaning Commissioner Woodbury on a cold, frosty morning last fall, when he ran his car over the wet asphalt and made the Commissioner gasp by showing him how it would skid.

This brought up the matter of street sprinkling, and the question was asked what was to be done about the matter. One member, who seemed to be familiar with the Board of Aldermen, told about the Mayor's disapproval of the Marks ordinance, and said that a bill would probably be passed making some arrangement with the present sprinkling association for one year, but under the supervision of the Street Cleaning Department. This member then added:

"I understand that the vote on the Marks ordinance by the aldermen was prearranged, with the understanding that the Mayor would veto it."

J. A. Hill complained that he had experienced narrow escapes because of carriages and wagons on country roads not showing a light in the rear. A general discussion on this subject ensued, and it was agreed that there should be a State law compelling all vehicles to show red lights behind.

James MacNaughtan said that most of his troubles had been experienced when attempting to pass vehicles in the country going in the same direction. He had also had some hardships because of skidding when he was using a Gasmobile with a heavy engine behind, and once he had a front tire punctured in Fifth avenue and the car swerved so that it ran into a team of horses. Then he told of the following:

"Once I was approaching a buggy drawn by a horse. In the buggy were two country women and a big basket of eggs. They were travelling in the same direction I was. I was close up to them and about to turn out and pass them, and I blew my horn. For some unoccountable reason the horse suddenly stopped stock still in the road. My car struck the rear wheel of the buggy and overturned it. The women and the basket of eggs were pitched into the ditch in one conglomerate mess, revealing a most remarkable color scheme. Fortunately the women were not hurt at all, but the eggs were beyond repair and the gowns of the women and their faces were badly mussed. A pecuniary compensation settled matters satisfactorily."

Some one asked about the accident in which Charles Fair and his wife were killed in France. Mr. C. J. Glidden, who went past the scene of the accident soon after it, said that a quarter of a mile from the fatal spot there is a steep hill that has a danger sign on it. Before that there are forty miles of superb road. He saw deep ruts in the grass at the side of the road, which is kept like a lawn. The ruts were six or seven inches deep. From them he judged that Mr. Fair had started to apply his brake on the hill while running at high speed, that the brake had set suddenly and the car had swerved toward a big tree, as indicated by the ruts. Mr. Fair had then evidently turned to avoid the tree and had turned suddenly. The wheels sank into the soft sod about ten inches and the car was overturned. The car, he said, did not hit the tree, although the passengers might have done so. He knew nothing about any punctured or bursted tire.

Mr. Shattuck then said: "We all know that it isn't safe to drive an automobile at fifty or sixty miles on the road, and we know that it is not safe to run at thirty miles an hour unless the road is straight and broad and smooth and we are familiar with it."

Mr. Adams then told of how on one occasion he had blown his horn when he wanted to pass a carriage and one of the women in the carriage had leaped out.

Mr. Shattuck told of an amusing experience with a horse that ran away when he was approaching, going in the same direction. When he overtook the runaway he had stopped and the man was standing in the road gazing straight up at the sky. Mr. Shattuck asked him what was the matter, and he replied:

"Well, I guess I'm drunk. Say, have you got any whiskey with you?"

Emerson Brooks told of a close shave he had from a big smashup with a trolley car while going across the Hackensack meadows. His chauffeur was inclined to show off, and he ran full tilt toward an approaching trolley car until very close to it. Then, when he attempted to turn out short, the wheels skidded on the tracks and the car grazed his shoulder so closely that his heart seemed to stop beating.

E. E. Britton told how he mastered frightened horses which reared and plunged at the sight of his automobile and could not be made to go ahead, turn or back up. He stopped his car, got out, went to the horses and picked up one foreleg of one and held it up for a minute or two while pating him on the neck. Then he let go the leg and pulled the horse's tongue out of his mouth while continuing to pat. After treating the team this way he had no difficulty in taking the bridles and making them do whatever he wished. He explained that the horse's brain could only conceive of one thing at a time, and that it was necessary when a horse is frightened simply to give him something else to think about.

E. B. Galleher said: "In my opinion, the danger of accidents is almost wholly a question of the operator. The speed cuts almost no figure; it depends upon the man; it is the personal equation that decides nine times out of ten whether there will be an accident or not. To illustrate this, I will relate my experience with two different men who represent each an extreme of the personal equation. One of them is a man who was one of the first in the automobile business in this country. He is familiar with the operation of every sort of car, and is the poorest operator I know. He does not go fast, but continually gets into all sorts of scrapes. If there is a pocket of vehicles in the street he gets into it. Trolley cars, carriages and women are always getting into his way. He is constantly having close shaves, and frequently accidents. Finally the concern he is with has stopped him from taking out a car because of the damage bills it has had to pay. His fingers seem to be all thumbs, his hands are both lefts, his feet are both lefts and the lobes of his brain are both lefts. He does not seem to see things quickly, nor to think how to navigate nor to act. Mr. Britton has been out with the man I mean, and he knows how it is."

Mr. Britton—"It made me sick, positively."

Mr. Galleher—"The other man is Fournier. I have ridden down Fifth avenue with him at forty miles an hour. He is chatting, smoking and looking at you and all about,

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and apparently not at the road; yet he gets through every tangle. If there is a hole in the traffic he finds it. If there is not he goes straight for a place that seems hopelessly blocked, and behold! there is an opening by the time he reaches it. He seldom slows up; he does not have close shaves, and he does not have accidents. This is simply knack, or intuition, as you choose to call it."

A Voice—"How about his accident with the Long Island Railroad train?"

Mr. Galleher—"That was a case where a wildcat engine bore down upon him without warning. Fournier was probably going fast, but there, again, his intuition showed itself when, as quick as thought, he turned his car up the track in the same direction that the engine was going so as to run along ahead of it if possible. That intuitive act saved the lives of his passengers. The car was struck in the rear. If it had been struck broadside the story would have been different."

Mr. Shattuck—"A better way would have been to have approached the crossing slowly and looked about to see if there was any train in sight. I never go over a railroad crossing unless I can first look up and down the tracks."

To corroborate Mr. Galleher's idea of the personal equation E. E. Britton next told of a thrilling experience he had one foggy evening coming in from Sea Cliff, Long Island, with his chaffeur, Fred Walsh: "While running along at a pretty lively pace we came to a place where there were carriages on the right hand side of the road. Suddenly Fred Walsh shot way over to the left, ran into the ditch, slipped the clutch and applied the brake. When the machine had stopped he remarked: 'I don't know whether it was a log or a man.' I had not seen anything. We went back a little distance in the fog and found a drunken man lying in the road. Both wheels on the right hand side of the car had run over his hat and missed his head by a few inches. I have the hat yet as a souvenir. The incident illustrated that quickness of perception, thought and action which Mr. Galleher calls intuition. If Walsh, when he saw what he could not tell whether it was a log or a man in the road, had turned six inches to the right we would have crashed into the carriages and there would have been a frightful accident. As it was, he saw the man in the middle of the road and the carriages on the right simultaneously, and with the perception swung way around inside the man and ran off the road to avoid him. Other men would have avoided one danger by running into a greater."

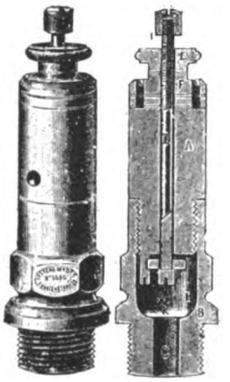
C. J. Glidden told some details of his notable European tour, and recommended the use of wooden blocks for chocks under the wheels when a stop is made while climbing a mountain. They are better than sprags, he said.

Mr. Shattuck indorsed the idea of wedge shaped wooden chocks, and said that he had an idea for a contrivance to be carried along, connected with the axle and dropped by means of chains behind the wheels without leaving the seat.

THAT AUTOMATIC IGNITER

After Being Forgotten it is Again Brought Forward, "Perfected," it is Claimed

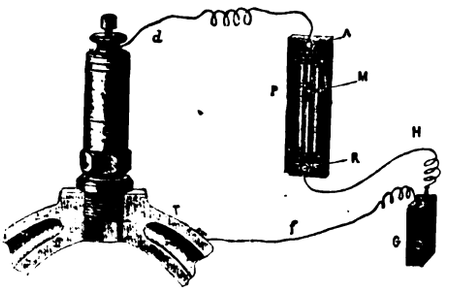
Not much has been heard of the electro-catalytic igniter of late. Considerable attention was given to it at the time of its presentation to the public, in 1901, and since, and on several different occasions, it has been put forth in an alleged practical form. But it never made any headway. Announcement is now made that an English concern,



H. M. Hobson, Ltd., is prepared to supply it in a perfected form.

As its name implies, the electro-catalytic igniter utilizes at the same time as electricity the effects of catalysis offered by metals of the platinic series. Certain alloys of these metals, such as iridium, rhodium, palladium, osmium, ruthenium, etc., possess in a high degree the catalytic power. The alloy which enters into the composition of the electro-catalytic igniter is claimed to possess this property of automatically igniting the gases of explosion motors in the highest degree.

The igniter (Figs. 1 and 2) consists essen-



tially of a body, B, screwed outside of the thread of the ordinary sparking plugs, with an inside passage C, leading to a chamber H in which is fixed a coil K of a special alloy, producing by its intense incandescence the ignition of the gases driven into the chamber by the compression stroke of the motor. The coil K is supported by the piece A screwed in the body or shoulder B. At E is a milled nut, under which the wire *d* (Fig. 3), conveying the electric current to the device, is clamped. The apparatus is entirely of metal, porcelain being wholly excluded, so that there is no fear of breakage.

The fitting of the apparatus is extremely simple. It can be effected in a few seconds in the following way: 1, Screw the igniter C in the place of the ordinary sparking plug; 2, fix, by means of a screw, within reach of the driver, at the most convenient spot for operation the small rheostat P (Fig. 30); 3, place the small accumulator, or battery, G in its usual place; 4, connect the terminal A of the rheostat P to the igniter C by means of an insulated wire *d*; 5, connect the terminal R of the rheostat P to any one of the terminals of the accumulator G by means of an insulated wire H; 6, connect by means of a third insulated wire *f* the remaining terminal of the accumulator G to earth by attaching it to any point of the motor T. To start the otor with the new ignition, after having carefully regulated the carburation, the slide M of the rheostat P is placed about midway between A and R (advance retardation) and the starting handle turned. If after a few attempts the motor does not start, the slide M is moved a little more toward A, and so on. When the motor is started the advance or retardation of the sparking is obtained by shifting the slide of the rheostat P toward A or R. After some time, when the igniter is quite hot, if the carburation is perfect, the electric current can be cut off by bringing the slide of the rheostat right over to R, when the ignition will be effected automatically simply by the catalytic effect. The advance of the sparking will also be effected in this case by moving the slide of the rheostat toward A. The motor is stopped by suppressing the admission either by interrupting the carburation or opening the compression valve—after first cutting off the electric current by bringing the slide of the rheostat to R.

Among the advantages claimed for the electro-catalytic igniter are (1) entire absence of porcelain; (2) no transformer or induction coil is necessary, and (3) advance and retardation of the sparking obtained instantaneously. If the electro-catalytic igniter is used on a motor cycle the adjusting rheostat can, if necessary, be dispensed with; in its place a simple switch is inserted, which may be the ordinary switch handle or the handle bar of the machine. In this case the speed is adjusted either by varying the exhaust, if the motor has such adjustment, or by varying the cut off of the gas, or by slightly varying the carburation.

Additional factory space is required by the Century Motor Vehicle Co., Syracuse. Several buildings are being examined with a view to leasing if found suitable. A five story building in the vicinity of the present factory is sought.

Dr. Auer von Welsbach, the inventor of the incandescent gas burner, has devised a new storage battery, the novelty of which lies in the use of cerium salts.

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DISCOVERED ONCE MORE

"First Steam Automobile" Again Crops up Surrounded by an Interesting Story.

From Lowell, Mass., comes a wonderful tale of the "first steam automobile ever built." Its history is, if the chronicler is to be believed, an interesting one, the story of its wanderings over the length and breadth of New England, made to do "stunts" at village fairs for yokels who gaped at it in amazement, a fascinating one. It made fortunes for its owners—not its inventor, however. He was the traditional inventor, unhonored, unwept and, until now, unsung.

"When was the first automobile built?" asked the reporter of the Lowell Sun of James Roberts.

"In 1865," quickly replied Roberts. "We called it a steam wagon," he continued, "but it was built on pretty nearly the same principle as the automobile. A fellow by the name of Roper built it. He lived in Roxbury, and he was a genius.

"I suppose I could tell you enough about that wagon to fill a book. I haven't seen it for a long time, but I know it is stored somewhere in Howard street in this city." Roberts went on to describe how the wagon was constructed, and when he came to tell about the steam it carried he chuckled. "The outsider never could tell how much steam we had on. The indicator didn't tell the truth. The men who owned it wanted it to lie, and it did. When it registered fifty pounds we had 100 on, and we could raise it to 150.

"I don't suppose there ever was anything invented that made more money than Roper's steam wagon. I handled it for about a year, I think. I made a mile in Poughkeepsie, N. Y., in 2 minutes and 20 seconds, and a little later I cut the record to 2 minutes and 12 seconds.

"I ran the steam wagon from Boston to Springfield in 1865. We gave an exhibition there and at New Britain, New Haven and in different parts of New York State. We went to Saratoga, and while there I took General Grant twice around the track. We led the Spaulding & Rogers circus for six weeks, and we took in cattle fairs and everything else in the West and Canada.

"I had great fun while we were with the circus. We used to parade in every city and town. We took the lead with the steam wagon and the elephants followed. I have seen people in various towns and cities so scared of the wagon that they would run away from it.

"The money that the wagon made at fairs and such places was as nothing compared to the money that the four slick articles who owned it made on the side. I know that one of them made $30,000 in one day. I drove it in some of the races that the four men had fixed and on which they had money bet.

"I tell you that wagon was a gold mine. All of the four men who owned it made fortunes. They weren't on the level, and the man who stacked up against them with a horse or anything else was sure to get the worst of it. The men that owned it were betting on the outside, and people didn't know who they were. They didn't care whether they bet on the wagon or the horse. It was all the same to them. The driver had instructions, and he was supposed to know his business.

"Charcoal was the fuel used, but we also used camphene. One fire would carry the wagon about three miles. I remember once in Hudson, N. Y., there was a man bet me $50 that I couldn't carry him up the hill to the Mansion House. I carried him there in double quick time and he paid me the $50. He said it was the fastest uphill ride he ever had in his life.

"Of course," said Roberts, "you understand that I was under contract to drive the machine as the owners ordered. I obeyed orders without asking why, although in some places I understood the game that was being played, but I had to keep to my contract.

"There are a thousand little incidents that I might tell you about the fun we had with that wagon. As to the character of the owners, I don't know as I would care to tell all I know about them. There's one story, however, that I think you ought to hear. In some place in New York, I'm not sure just where, a horse with a record of 2:26 was matched to race the wagon. His owner believed that he could make a mile in 2:20. He was a fast horse for those days, and if everything had been on the square he would have won the race. The wagon men tried to put their money on the horse, but the outsiders wanted to bet the same way. The four men then turned around, took all the horse money in sight—several thousand dollars, I don't know just how many—and then they issued their instructions to the driver.

"The start was made, and in spite of all he could do the driver of the wagon could not get away from the horse. The fellow in the sulky did not try at any time to pass the wagon. It was serving him as a pacer, and the driver of the wagon the last time around realized that he would have to resort to strategy if he would win the race and save the management's money. The wagon refused to duplicate the speed it made on two other occasions. Before the home stretch was reached the fellow on the wagon took two balls of twine saturated with camphene from a box near his seat, and threw them, unnoticed, into the firebox. Up from the firebox came a sheet of flame. It shot into the air about ten feet and frightened the horse out of a seven years' growth. He went into the air and was acting like a bucking bronco when the steam wagon went under the wire."

In reply to a question as to how extensively the wagon was advertised Mr. Roberts produced the following circular, which he said went the rounds of the newspapers and was also liberally displayed, poster fashion, throughout the various cities that were visited:

"No more use for horses! The world outdone! The days of slow coaches numbered. The family steam carriage, the only vehicle of the kind in the world. This wonderful triumph of science, which is unrivalled for cheapness and durability, has attained the speed of forty miles an hour upon an ordinary road, and when tried upon the track of a horse railroad has reached the astonishing rate of one mile per minute. From experiments undertaken by some of the most scientific men in this country and Europe, who are unanimous in pronouncing it the greatest invention of the age, it has been ascertained that it will run for twenty-five miles upon a single peck of coal, thereby rendering the expense less than one cent a mile. It can be managed by a single person, and, as will be evident to every one who witnesses its performance, it is destined to supersede entirely every vehicle of conveyance now in use. It weighs 550 pounds, which renders it as easy of management as an ordinary carriage.

"The proprietor of this wonderful work of genius, in compliance with general desire, has consented to offer it for public inspection, and will exhibit it for a short time only at ——."

Caught the Horsemen in the Act.

About two dozen automobilists assembled on the road near Seacliff, Long Island on Lincoln's Birthday to watch the races of the Long Island Light Harness Association, held on a measured course on the highway of Seacliff avenue. It is said that some members of the Automobile Club of America were among the number, but this is not known to be true.

It was the declared intention of the automobilists to prosecute the horsemen for exceeding the speed limit specified in the Cocks law. During the races snapshots were taken, and after the races the course was measured. The horsemen at the races are said to have been among the most persistent opponents of the automobilists, and the latter said that turn about is fair play.

Price of Second-Hands in Paris.

Some idea of the prevailing prices in Paris for second-hand cars can be obtained from the following list of such cars offered for sale: A 30 horsepower Mercedes, as good as new, 38,000fr.; a 60 horsepower Mors racing machine, 38,000fr.; a 16 horsepower five-seat Mors, 12,000fr.; a ten horsepower Panhard tonneau, 11,000fr.; a 16 horsepower Delahaye tonneau, 9,000fr.; a 12 horsepower Darracq tonneau, 7,000fr.; a 6 horsepower Panhard tonneau, 5,500fr.; an electric brougham (new), 5,500fr.; a Columbia electric carriage, 4,000fr.; a Mors, four seats, 6 horsepower, 1,000fr.; and a 4½ horsepower Delahaye spider, 800fr.

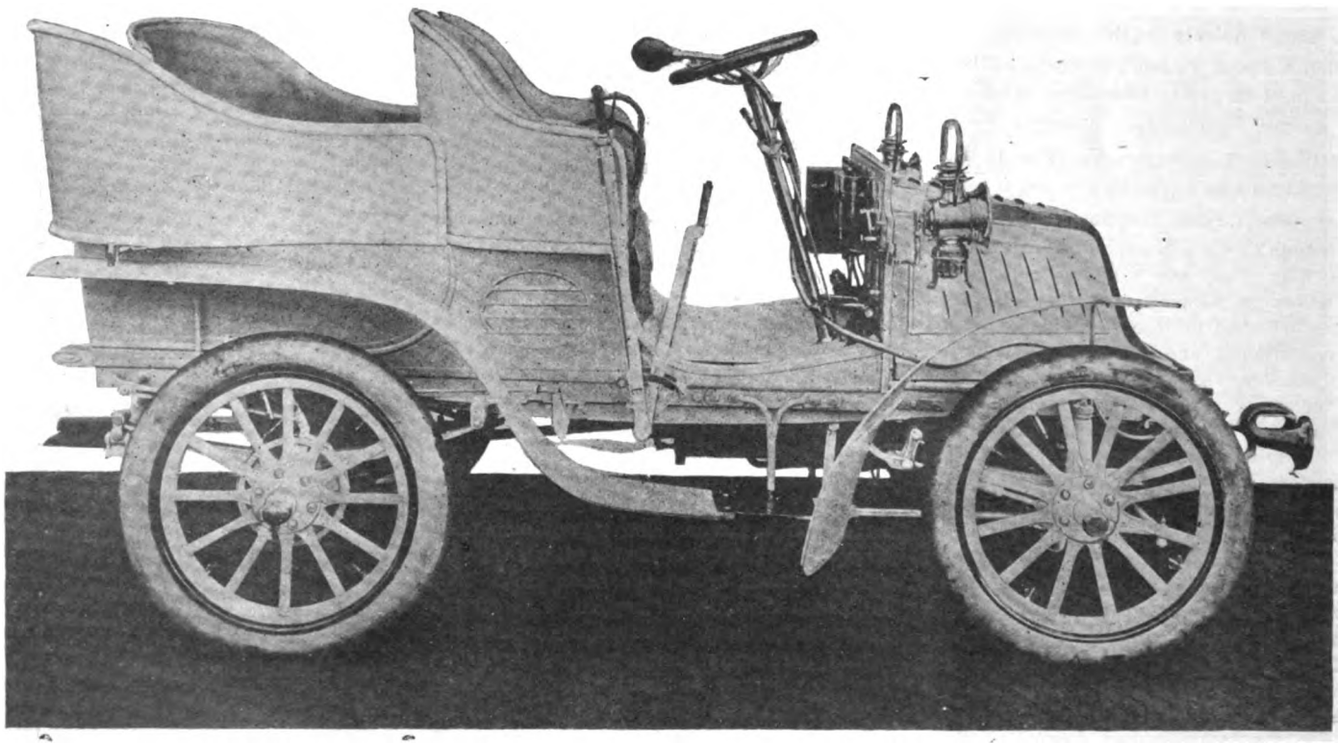
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Noiseless One, Two, Four and Eight Cylinder Types. 3½, 4, 6, 8, 10, 12, 16, 20, 35, 60 H. P. runabouts, motorettes, touring cars, surreys, breaks, cabs, omnibusses, ambulances, broughams, racing cars, delivery vans, trucks. Direct drive on high speed. Bevel gear. All steel parts made by Krupp. Special safety devices making gasolene tank and can non-explosive. Band and block brakes. All closed carriages with removable tops, all pleasure vehicles with removable bodies, allowing business vehicles to be made of them. The most liberal firm for spare parts and tools. Look at the list. We invite inspection. All duplicate parts in stock. All cars single lever control, double suspension.

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Back Firing in Induction Pipe.

Sometimes trouble is experienced with back firing in the induction pipe, flame being seen to issue from any orifice between the valve box and the carburetter. This points to imperfect closing of one or more induction valves, due either to unequal wear of the surface of the valve itself or the valve stem in the guide. The valve, with its seating, should be withdrawn and examined. By pressing with the fingers in an attempt to rock the valve on its seating, wear of this kind can be quickly detected. If the valve itself is worn, the remedy is to grind it in with very fine emery powder and oil. Fix the valve upside down carefully in a vice, the jaws of which are protected by leaden sheets, having first dismounted the cap, cotter and valve spring. Smear the seating of the valve with a little oil and emery, and twist the same a quarter turn each way, lifting the valve slightly out of its seat in little jumps by pressing the forefinger of the left hand against the end of the valve stem. The pressure to allow this should be adjusted between the finger of the left hand pressing upward on the valve stem and the pressure of the right hand on the butt of the screwdriver used to twist the valve. This serves to grind the valve and seating down equally all round, and when the ground surfaces show a clean and silvery appearance, and the valve feels perfectly solid in its seat, the job will be sufficiently well done.

When the Fire is at Fault.

When a car using a flash type of boiler is running badly and showing steam it is an indication that the fire is not in a good condition; therefore, wet steam is being put through the engine. This is much more difficult to condense than the superheated steam used when a fire is going properly. The chief reason for the burner failing to give a good fire is that the vaporizing tubes are not cleaned often enough. As a result the carbonic deposit from the oil accumulates to such an extent that only a small quantity of the fuel is served to the burners. Sufficient heat, therefore, is not generated to convert into steam the amount of water delivered to the generator by pumps. If the oil vaporizing tubes are kept clean and free, the pump glands screwed up sufficiently tight to prevent leakage, but not tight enough to cause any undue friction on the plungers, the car will run at its best so far as the generator and its attendant parts are concerned.

Factors in Hill Climbing.

It is always well to remember that engine efficiency alone does not insure hill climbing powers. The number of speed changes provided is a very considerable factor. A car with only two speeds, for example, must take a hill either very slowly or at speed. The drop to the low speed is a considerable one, as on it the speed will frequently get down to four or even three miles an hour. The extremes are not so great with a three speed gear, while with one having four speeds there is no great variation in the running.

Even then, however, and especially with cars having an abundance of power, the driver likes to keep to the high speed at all times. If he has to slow for traffic he will throttle his engine in preference to shifting to his third speed. Similarly, if a very steep hill is encountered he will keep on the fourth speed until the very last moment—until it becomes apparent that the engine will stop unless it is given relief by means of the change gear.

Consequently both the number of changes and the ratio of the gearing have to be taken into account, along with the engine power, in determining whether or not a car is a good hill climber and whether the engine is delivering the full power. Many autoists neglect to take these factors into account.

Accumulating Impedimenta.

Between the desire to be prepared for practically any mishap that may occur on the road, and an indisposition to carry too much in the way of repair impedimenta, the average autoist is puzzled to know how to fill his tool box. Usually he keeps adding to it, putting in a coil of wire, extra wrenches, a lifting jack, etc., as the necessity for them arises, until he gets such an accumulation of odds and ends that some day he cleans the whole thing out and starts in fresh. Then he gets caught without some simple but badly needed part, and resolves to start in again. The matter is one that is worth attention, and the careful autoist is beginning to recognize the fact.

Awards for Timing Apparata.

Awards have been made by the Automobile Club of France as a result of a trial of automobile timing apparatuses on the Dourdan route. The first prize of 600 francs ($120) was given for a Morse system and 400 francs ($80) for a Stralsec system. The Morse system will probably be officially adopted for short distances. Its main features are those of a chronometer and ribbon, like a Morse telegraph, and a needle, which marks the time in fifths of seconds.

When Compression is Poor.

Compression is never very good when tested immediately after the exhaust valve is ground in, when the engine is cold. It is only after the engine has run for a time and the valve and seating have grown hot that they become thoroughly adapted to one another, and the compression is appreciably improved.

The Captain's Coming Glory!

"It is understood that Captain C. A. Roby will become a votary of the 'gasolene chuck, chuck,' before the autumnal red again blazes on the maple hillsides," says the Nashua (N. H.) Telegram.

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"Man," not Master, Guilty.

Honors are with W. K. Vanderbilt, Jr., in the appeal from the sentence by default which was imposed on him in Paris for excessive speeding last summer. He has established an alibi, and now the prosecution seeks to shift its case from Vanderbilt to his chauffeur, Coubac by name.

Coubac testified that Vanderbilt was not in the automobile, whose only occupants were the Duke of Marlborough and himself. An affidavit of the Duke of Marlborough to the same effect, taken before the French consul in London, was also introduced.

An amusing scene occurred when Coubac finished his testimony. The justice said that, in view of the evidence, it seemed proper that the chauffeur should be brought before the court as the accused man, instead of as a witness, and he asked Coubac if he wished to change places with Mr. Vanderbilt, so that the two days' sentence standing against Mr. Vanderbilt could be transferred to him. Coubac protested energetically against the judge's suggestion, declaring he had come before the court as a witness and not as an accused person. But the judge insisted upon the transfer, whereupon Maitre Louis Binoche, counsel for Mr. Vanderbilt, also interposed a strong protest.

"I insist," he said, "that there be a definite decision whether my client is guilty or not guilty. I am opposed to any transferrence of the sentence."

The judge then announced the adjournment of the case until March 18, saying that Coubac would be cited then, not as a witness, but as the accused person.

How Charley Paid his Hotel Bill.

M. Louis Charley, the redoubtable agent for Mercedes cars, paid his visit to America this year with many misgivings. He was doubtful how much would be remembered of his dealings when he was here two years previous. When he left it was in a flurry of excitement that was ludicrous.

He gave up his room at the Manhattan Hotel about half an hour before the time his steamer was to sail. A cab was waiting for him at the door and in settlement of his bill, which was about $100, he tendered a $500 bill. The hotel clerk could not change it, and said so as he reached forward and took hold of it. Hearing this M. Charley tightened his grip on the bill and the pair stood, each having hold of one end of the bill. Charley was frantic with fear of losing his steamer. He would not allow the bill to be taken from him to be sent out and changed. He insisted on a clerk being sent to the steamer with him, where change could be had from the purser. They reached the dock as the signal was given for the gang planks to be hauled down and rushed aboard. Change was obtained from the purser, the clerk was paid the amount of the bill and the steamer was delayed several minutes after her time in order to let the clerk get ashore again.

Cleveland Elects Officers.

At the annual meeting of the Cleveland (O.) Automobile Club, held last week, the acquisition of a clubhouse was given consideration, but no definite steps were taken. After an elaborate dinner at the Hollenden the election of officers to serve during 1903 took place, as follows: E. Schriver Reese, president; Fred. T. Sholes, vice-president; George Collister, secretary; Windsor T. White, treasurer. These, with Walter C. Baker, Charles Shanks, John H. Brown, E. T. Rook and Walter S. Root constitute the directors.

Dayton Decides on Race Meet.

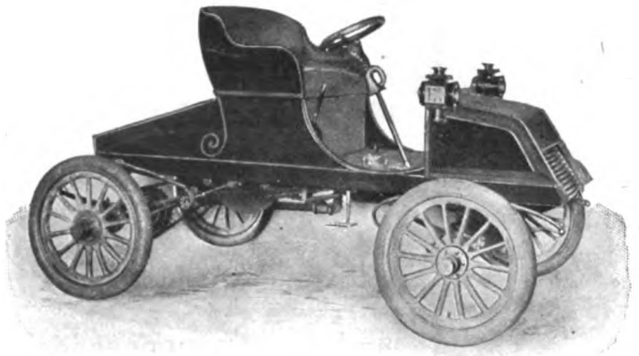
Dayton, Ohio, is the first city to come forward with the definite announcement of a race meet. The Dayton Automobile Club held a meeting last week and took the preliminary steps. A committee was appointed to make the necessary arrangements, and was given full power to act. This committee consists of Earl Kiser, Dr. C. A. Bonner, George Peckham, E. E. Euchenhofer and George Andress. The races will probably be given on May 30.

One Benefit of Club Membership.

Arrangements for a club station have been made with the Columbia automobile garage, corner of Pine and Garnet streets, Providence, R. I., which will be the official station of the Rhode Island Automobile Club. Members will have the use of the garage and the free storage of their carriages for twenty-four hours or any part thereof.

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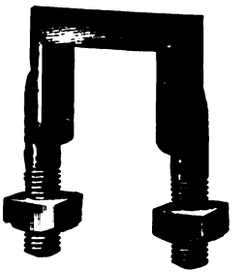
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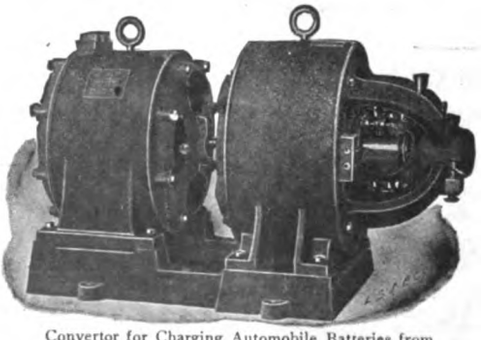


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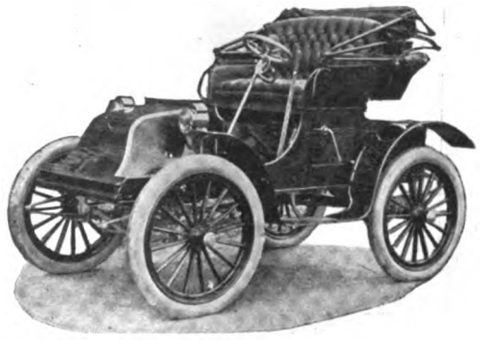
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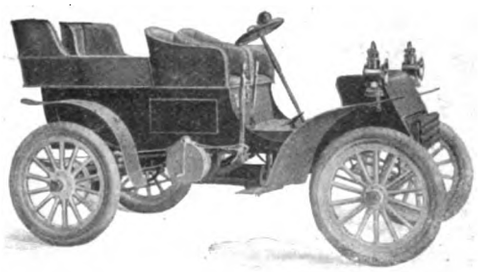
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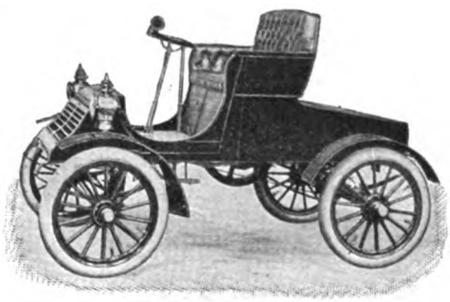
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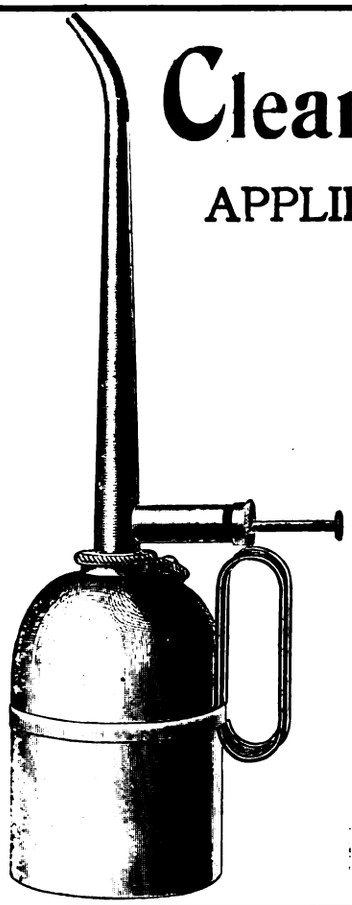
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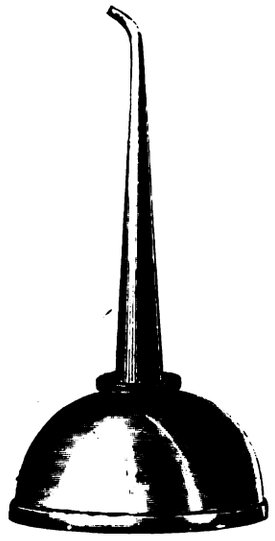


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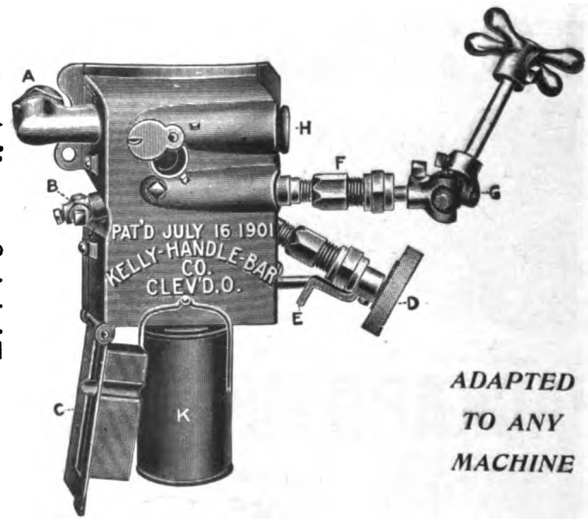
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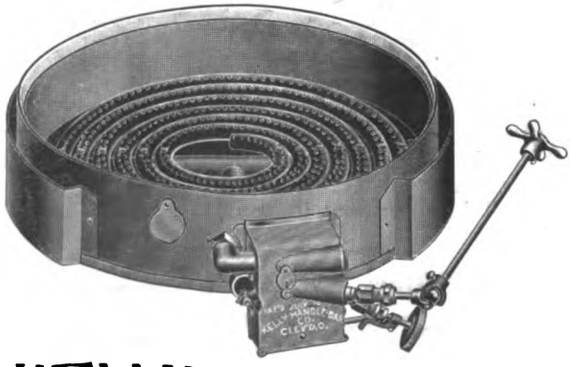
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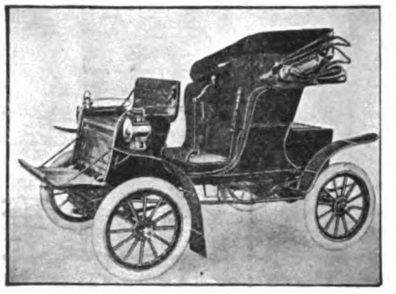
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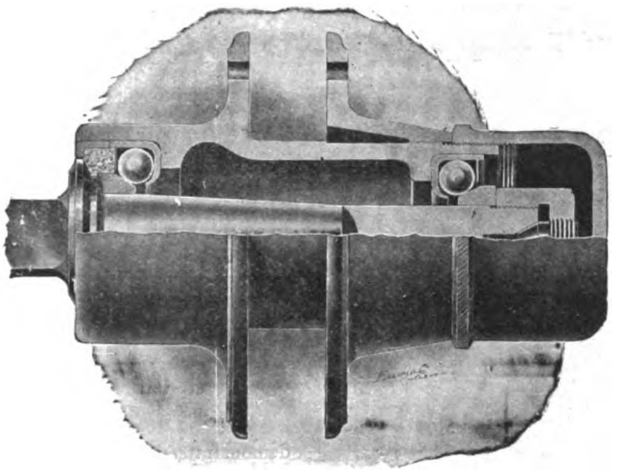
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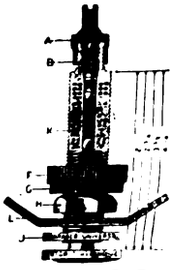
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The Week's Patents.

720,326. Process of Preparing Storage Battery Plates. Rufus N. Chamberlain, New York, N. Y., assignor by mesne assignments, to Gould Storage Battery Company, New York, N. Y., a corporation of West Virginia. Filed March 3, 1899. Serial No. 707,592. (No model.)

Claim.—1. The process of treating lead storage battery plates to clean the same and provide them with a roughened or pitted surface which consists in cleaning the plates by exposing them successively to electrolytic action as anodes in a solution capable of dissolving lead, thereby cleaning and roughening the plates and producing a solution of lead, redepositing the dissolved lead on a cathode, and removing said anod plates when properly cleansed and roughened and forming them substantially as set forth.

720,343. Compound Expanding Fluid Engine. Frank Goodfellow, George Goodfellow and Robert Goodfellow, Hyde, England. Filed July 14, 1902. Serial No. 115,511. (No model.)

Claim.—1. In a single acting expansive engine, the combination of two equal low pressure cylinders, a high pressure cylinder between the latter cylinders, pistons in the cylinders, connecting rods connected thereto, a shaft, cranks on the shaft connected respectively to said connecting rods, the two cranks connected to the low pressure pistons being in line and shorter than the crank for the high pressure piston, whose crank is placed at an angle of 135 degrees relatively to the other two cranks, and means for distributing live steam to the high pressure cylinders, and exhaust steam from the high pressure to the low pressure cylinders.

720,361. Method of Regenerating Platinum Contact Substances. Constantin Krauss and Rudolph M. von Berneck, Hoichst-on-the-Main, Germany, assignors to Farbwerke, vormals Meister, Lucius & Bruning, Hochst-on-the-Main, Germany, a corporation of Germany. Filed March 6, 1902. Serial No. 96,922. (No model.)

Claim.—The herein described process of regenerating the platinum contact substance employed in the manufacture of sulfuric anhydrid, which consists in passing through said platinum contact substance a mixture of steam, purified pyrites burner gasses and oxygen, until the resulting gases contain no arsenic compounds, and then introducing dried purified pyrites burner gases and oxygen into the contact substance until the same attains its normal activity, substantially as set forth.

720,404. Controlling Gear for Motor Vehicles. John Q. Chase, Dayton, Ohio, assignor to Will I. Ohmer, Dayton, Ohio. Filed Sept. 30, 1901. Serial No. 77,004. (No model.)

Claim.—1. A controlling gear for motor vehicles comprising a shaft, a pinion mounted to slide thereon and rotate therewith, a disk across the face of which said shaft extends, said disk having concentric rows of female teeth and being movable toward and from the pinion, and a lever fulcrumed to move in planes at an angle to each other and operatively connected with both disk and pinion, the movements of the lever in one plane controlling the movements of the disk toward and from the pinion, and the movements of the lever in the other plane controlling the movements of the pinion across the face of the disk, substantially as described.

720,563. Storage battery system. Rufus N. Chamberlain, Depew, N. Y., assignor to Gould Storage Battery Company, New York, N. Y., a corporation of West Virginia. Filed Oct. 17, 1901. Serial No. 78,945. (No model.)

Claim.—1. The combination with the storage battery, the end cells, the end-cell switch and a circuit connected to the storage battery through said switch, of a polarization cell or cells connected between the two sides of said end-cell switch and having a counter electromotive force substantially equal to the electromotive force of the end-cell sections included between successive positions of the switch, substantially as set forth.

720,577. Electric battery. Edwin R. Gill, New York, N. Y., assignor to Invention Developing Company, a corporation of New Jersey. Filed June 26, 1900. Serial No. 21,680½. (No model.)

Claim.—1. In a test set, a retaining block containing cavities opening at one surface of the block, battery-cells in said cavities projecting slightly beyond their orifices, and means operating by spring tension for holding said cells in place, substantially as described.

720,592. Electric battery. Milton M. Kohn, Chicago, Ill. Filed July 31, 1895. Serial No. 557,661. (No model.)

Claim.—1. In an electric battery, the combination with a retaining vessel, positive and negative elements, and an excitant therein, of means for sealing said retaining vessel, a valve 24 having passages 27, and a threaded passage 26 communicating with the passage 27 and with the atmosphere, and a threaded plug fitted in the upper end of said threaded passage, substantially as described, and for the purpose specified.

720,639. Pneumatic tire. Francesco Toni, London, England. Filed Sept. 8, 1902. Serial No. 122,580. (No model.)

Claim.—1. A pneumatic tire for heavy vehicle-wheels consisting of a tire-cover, of an air-tube located within said cover, of enlarged flexible but incompressible rectangular-shaped beads formed on the edges of said cover, of a wood felly, of rectangular rabbets formed in the outer edges of said felly and adapted to receive the beads of the tire-cover, of annular rings formed with rectangular rabbets, one of said rings on either side of the felly and engaging the said felly and the outer side of the bead on the cover, of nutted bolts passing through said rings and fellies for securing the rings to the felly and of a flat annular plate permanently fixed to the periphery of the wood felly and having edges overhanging the rabbets in said felly and engaging the enlarged beads of the cover, as set forth.

720,653. Electric battery. Vincent G. Apple, Dayton, Ohio. Filed June 3, 1901. Serial No. 63,012. (No model.)

Claim.—1. In an electric battery, the combination with a conducting containing-case, of a vertical series of lateral bars joined to the sides of said case constituting a supporting structure for active material, a series of said structures in said case, and a series of removable plates or guids in alternating position with said bar structures, substantially as set forth.

720,713. Motor-vehicle. Charles A. Lieb, New York, N. Y. Filed Apr. 5, 1902. Serial No. 101,603. (No model.)

Claim.—1. In a motor-vehicle, the combination with a pair of pivoted axles, a reach pivoted to each axle, pairs of links connected to each axle at one end and pivoted to a plate at the opposite end, and means for moving the plate transversely of the axis of the vehicle, whereby the angular inclination of the axles as regards each other may be altered.

720,752. Internal-combustion engine. Constantine L. Straub, Perth Amboy, N. J. Filed Mar. 14, 1902. Serial No. 98,252. (No model.)

Claim.—1. The combination, in an internal-combustion engine, of two differential cylinders and pistons, having their lower, or pump pistons, secured to their upper or working pistons by means of open legs, and provision made whereby, at every up-



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ward stroke, the pump-pistons can charge and compress into their respective pump-cylinders and working pistons a certain amount of air, preparatory to forcing it into the opposite working cylinder, through ports which are uncovered by the downward movement of their respective working pistons, at or near the end of their crank-stroke, substantially as described and for the purpose specified.

720,759. Explosive-engine. Henry W. Tuttle, Philadelphia, Pa., assignor to John M. Scott, Philadelphia, Pa. Filed May 2, 1902. Serial No. 105,599. (No model.)

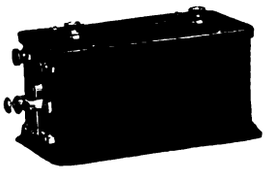
Claim.—1. In an explosive-engine, a piston adapted during its upstroke to compress the gas or equivalent hydrocarbon in an induction-chamber and during its downstroke to compress fresh air in an air-compressing chamber and to feed the same to the base of the explosion-chamber, combined with means for regulating the amount of gas entering the induction-chamber and the fresh air entering the air-compressing chamber, said means comprising a tubular rocking valve and a spring-controlled puppet-valve both adapted to control the entrance of the charge to the induction-chamber, and a valve adapted to control the amount of air entering the air-compressing chamber and connected to one of the gas-induction valves for simultaneous operation.

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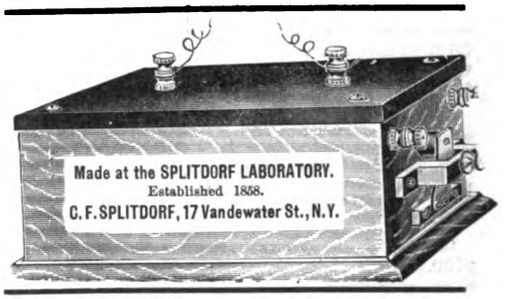
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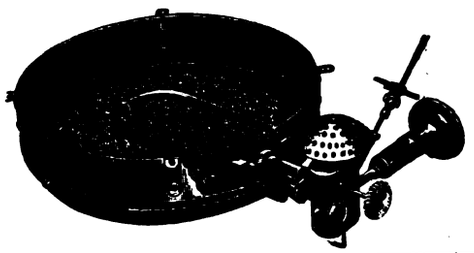


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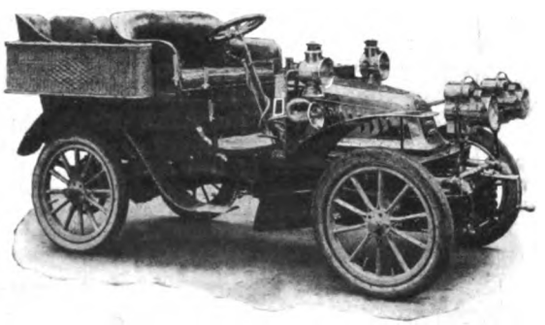
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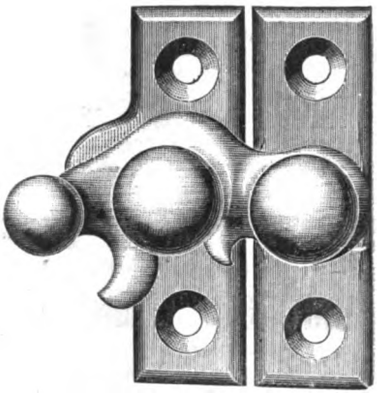


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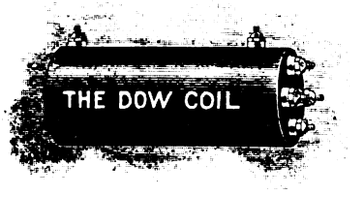


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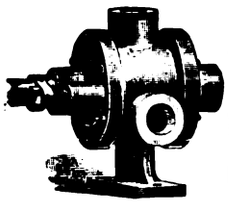


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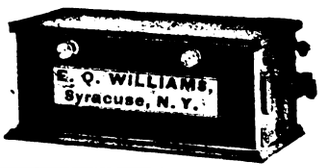


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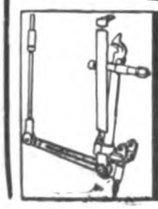
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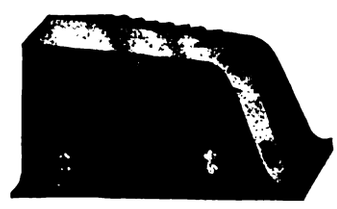
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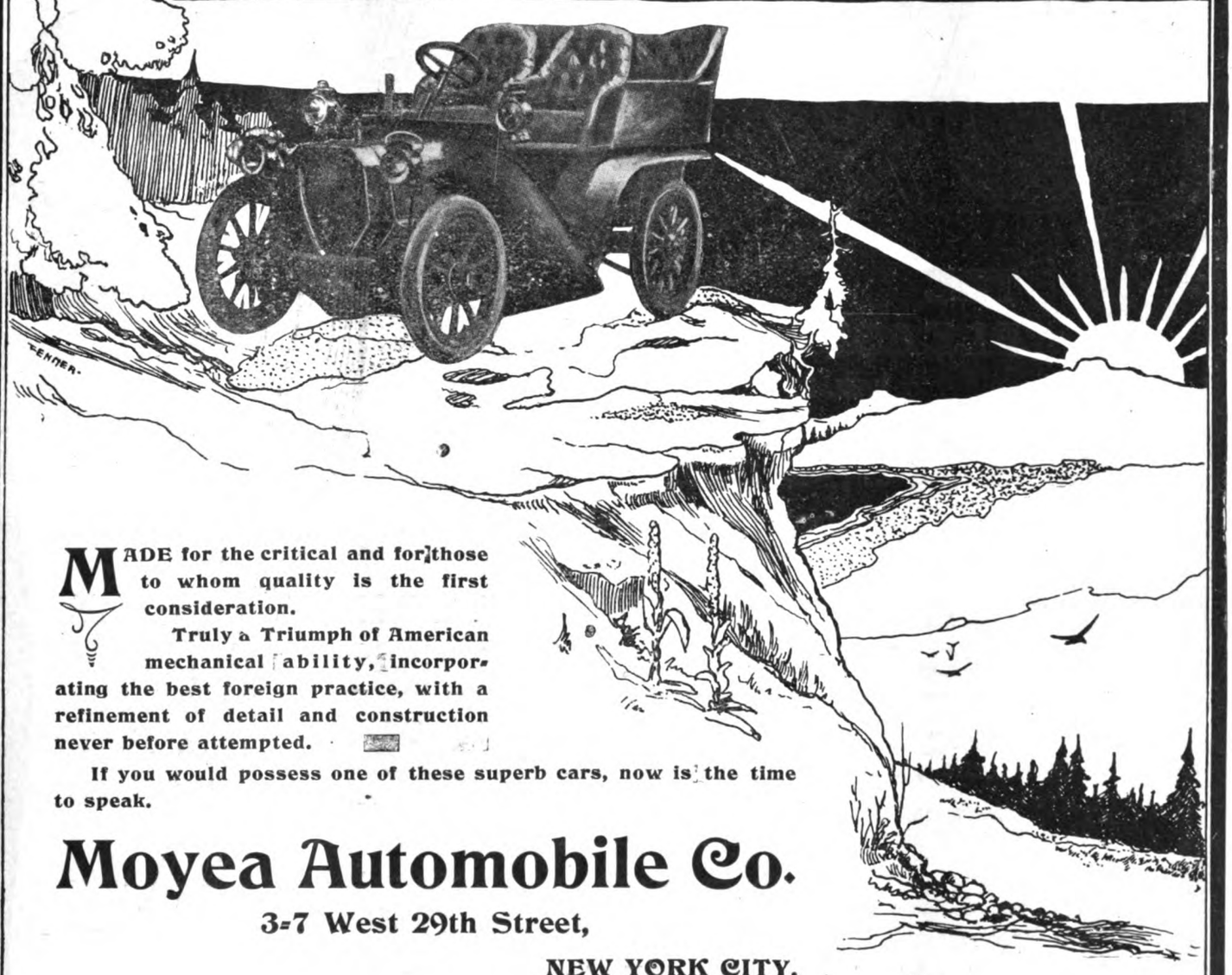
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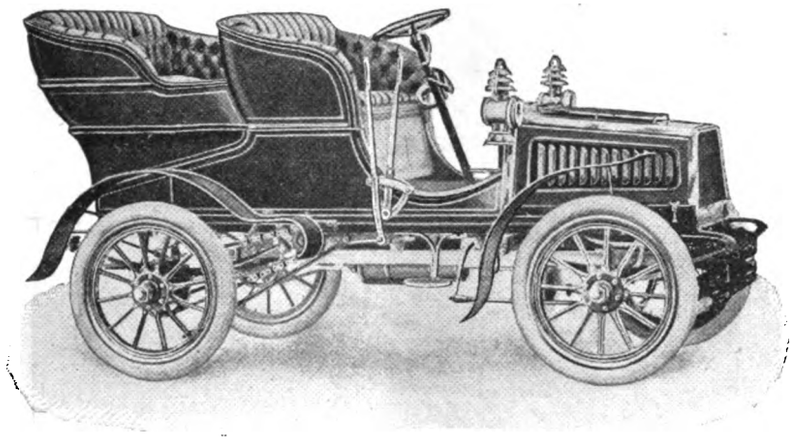
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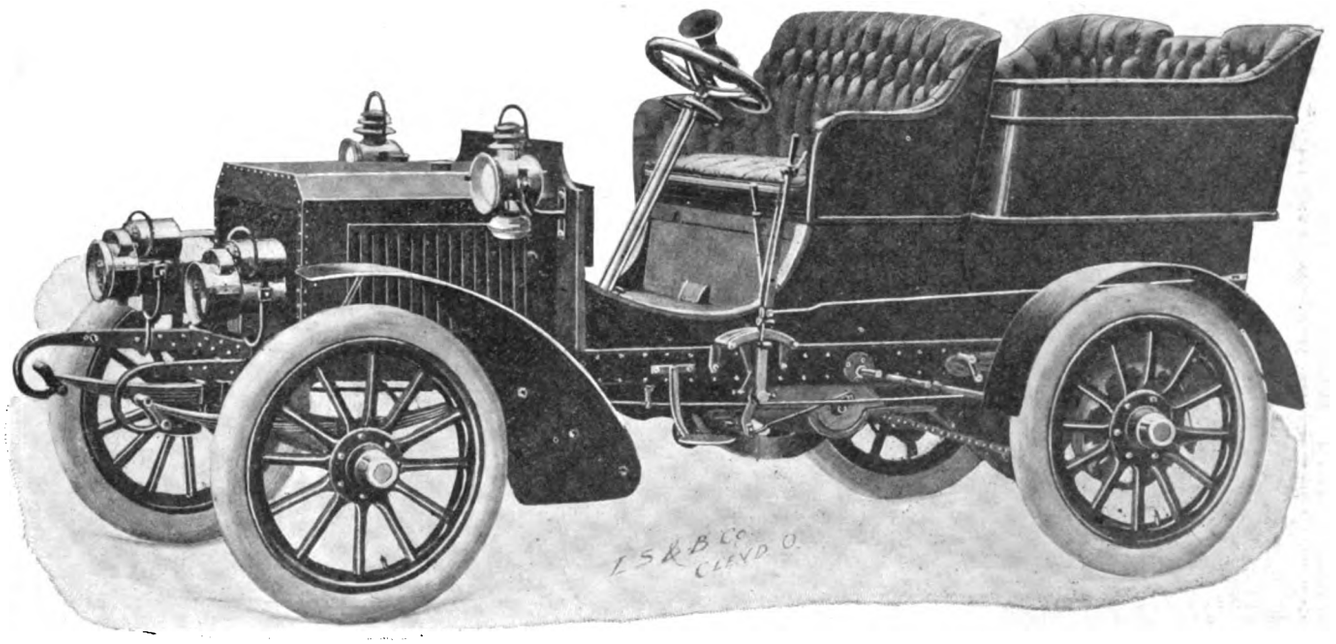
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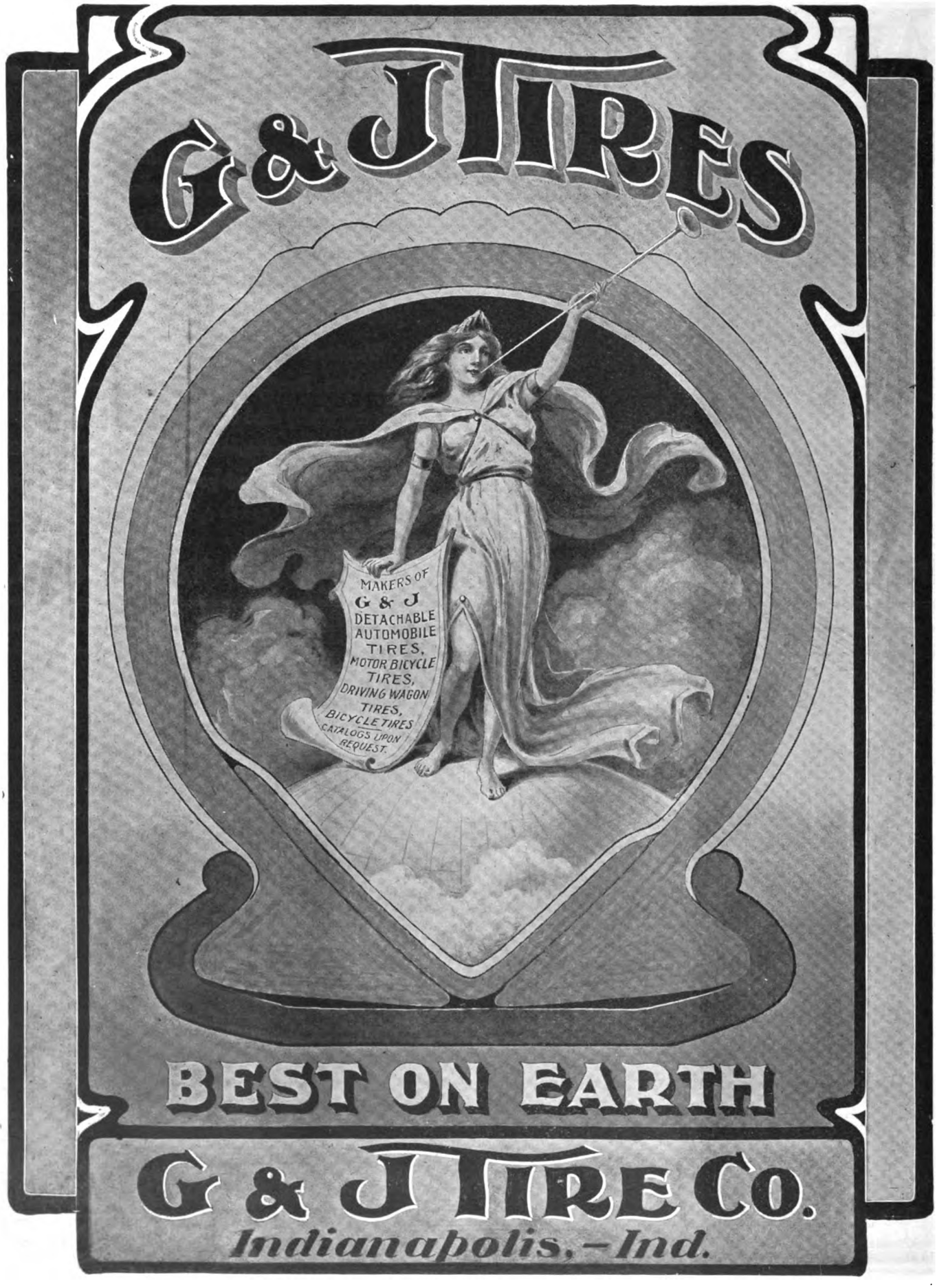


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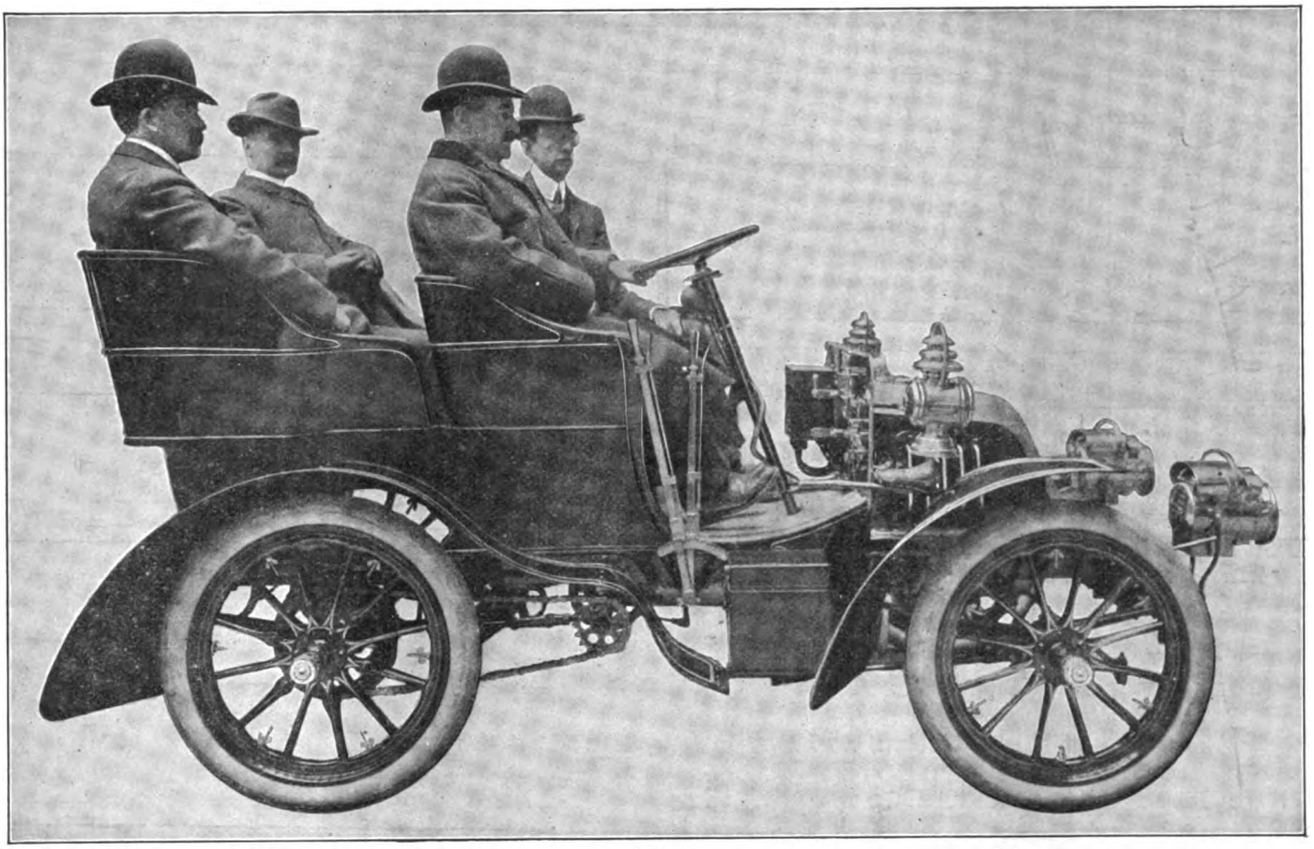
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The B. F. Goodrich Co.

Akron, O.

Gentlemen:-

It doubtless will prove pleasing to you if we report that we have adopted the Goodrich tire for all Baker Electrics, and more especially satisfactory will this be when we explain that this conclusion represents the result of most thorough and careful testing of most of the well known tires in the market.

Yours very truly,

The Baker Motor Vehicle Co.

M. L. Goss Secty.

G.-No. 1.

THE B. F. GOODRICH COMPANY,

Factories, AKRON, OHIO.

BRANCHES:

NEW YORK, 66-68 Reade St.,
BUFFALO, 9 West Huron St.
CHICAGO, 141 Lake St.,
PHILADELPHIA, 922 Arch St.
SAN FRANCISCO, 392 Mission St.,
DETROIT, 80 E. Congress St.
BOSTON, 157 Summer St.
DENVER, 1444 Curtis St.
LONDON, ENGLAND, 7 Snow Hill, E. C.

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The CADILLAC "It's just good all over" $750.

With Tonneau, $850.

The Best Proposition for 1903.



Catalogue for the Asking.

THE FOLLOWING AGENCY LIST PROVES IT:

Cadillac Automobile Co. of Illinois, Chicago, Ill.
Cadillac Co. of New York, New York City.
John Wanamaker, Philadelphia, Pa.
William E. Metzger, Detroit, Mich.
Pence Automobile Co., Minneapolis, Minn.
Conrad Mueller Co., Indianapolis, Ind.
American Cycle Mfg. Co., Boston, Mass.
American Cycle Mfg. Co., Providence, R. I.
American Cycle Mfg. Co., Washington, D. C.
Cleveland Automobile & Supply Co., Cleveland O.
Oscar S. Lear, Columbus, Ohio.
Centaur Motor Vehicle Co., Buffalo, N. Y.
Crescent Automobile Co., Jersey City, N. J.
New Jersey Automobile Co., Newark, N. J.
A. T. Wilson, Denver, Col.
R. V. Connerat, Savannah, Ga.
Michigan Automobile Co., Grand Rapids, Mich.
Houghton Implement Co., Grand Forks, N. D.
Peckham Carriage Co., Dayton, Ohio.
The Hanauer Automobile Co., Cincinnati, Ohio.
F. O. Bailey Carriage Co., Portland, Me.
Norman W. Church, Los Angeles, Cal.
R. W. Whipple, Binghamton, N. Y.
Theodore Jonas, Milwaukee, Wis.
Adolph A. Geisel, Springfield, Mass.
Birney A. Robinson, Worcester, Mass.
James Lucey, Albany and Troy, N. Y.
Fred A. Mabbett & Co., Rochester, N. Y.
Irvin W. Dill Carriage Works, Harrisburg, Pa.
Brown, Thomson & Co., Hartford, Conn.
Charles E. Whitten, Lynn, Mass.
Murphy Bros., Erie, Pa.
Hyslop Bros., Toronto, Ont.
Elmira Arms Co., Elmira, N. Y.

WILLIAM E. METZGER,
Sales Manager.

CADILLAC AUTOMOBILE CO., Detroit, Mich.

RESULTS at the NEW YORK SHOW Prove the "YALE" MOTOR CAR a Success.

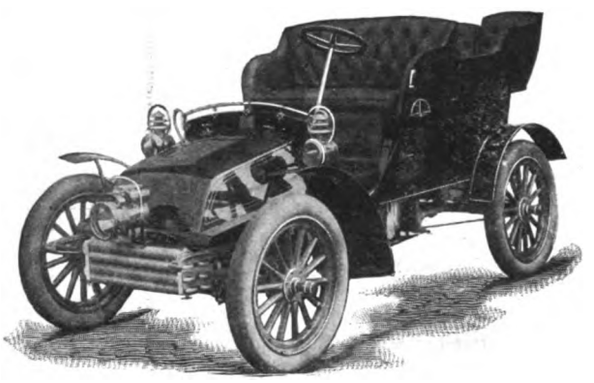
WE DEMONSTRATED TO ALL COMERS AND DID BUSINESS.

A RATIONAL VEHICLE,

AT A RATIONAL PRICE,

$1750.

NO VARIATIONS.



SIMPLICITY—
STRENGTH.

ELEGANCE IN DESIGN.

THOROUGHNESS IN WORKMANSHIP.

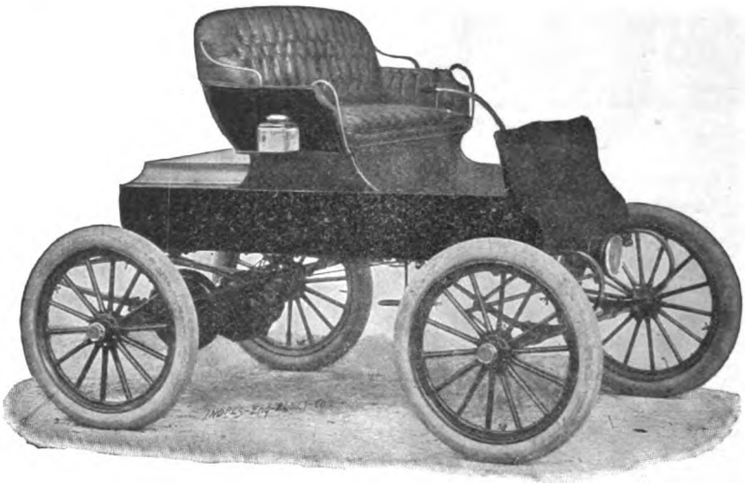
WE HAVE APPOINTED THE FOLLOWING AGENTS AND WILL CONSIDER A FEW MORE:

THE DU BOIS COMPANY, Ltd., London, England.
PARDEE & COMPANY, Chicago, Ills.
CENTAUR MOTOR VEHICLE COMPANY, Buffalo, N. Y.
W. E. METZGER, Detroit, Mich.
F. J. READ, Newtonville, Mass.
QUILLING BROTHERS, Cleveland, Ohio.
JAMES LUCEY Troy, N. Y.
HYSLOP BROTHERS, Toronto, Ontario.
N. W. CHURCH, Los Angeles, Cal.

THE KIRK MANUFACTURING COMPANY, Toledo, Ohio.

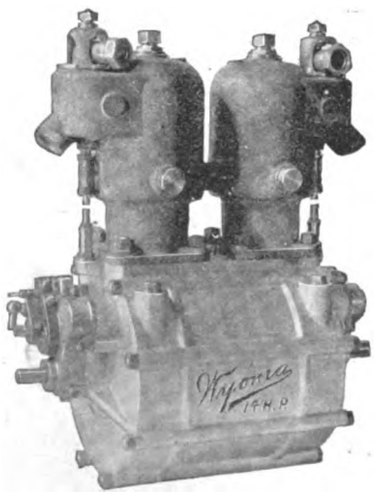
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An Open Letter to Automobile Dealers



You are in the business to make money. Your profits depend upon Automobiles sold by you in your territory. Why confine your selling efforts to any one kind of power? All powers have their advantages. The Electric embodies many features of practical worth with a minimum of trouble. **NATIONAL ELECTRICS** represent that which is the best in the Electric field. To add our line, you are only showing good business judgment. Electrics are going to sell. Why spend your time talking other powers when a customer wants a **NATIONAL?** The National agency will prove to be a most valuable asset and money maker. Think it over and write us about our prices, terms and catalogues

National Motor Vehicle Co., 1400 East 22d Street, INDIANAPOLIS, INDIANA.



WYOMA GASOLENE MOTOR
Single Cylinder, 8 H. P., 135 pounds.
Double Cylinder, 14 H. P. 205 pounds.

RELAY MOTOR CAR CO.,

Tenth and Exeter Sts., Reading, Pa.

MANUFACTURERS OF

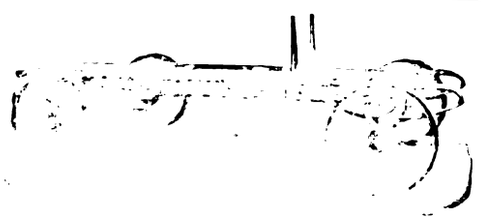
GASOLENE MOTORS, DIFFERENTIAL SPUR GEARS, TRANSMISSION GEARS, TUBULAR RUNNING GEARS, RADIATING COILS, MUFFLERS, ALUMINUM AND BRASS HOODS, WOOD AND WIRE WHEELS, CARBURETERS.

Our Motors are of French Type, Water Cooled, And Equal in Finish and Service to Best Foreign Makes.



WYOMA DIFFERENTIAL SPUR GEAR
8 pitch, — 60 teeth.

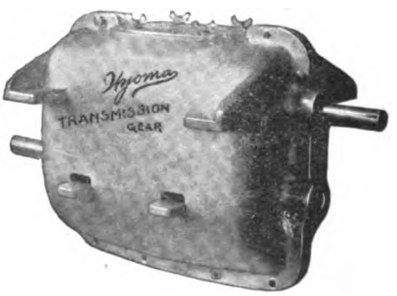
The Differential Gear has Manganese Bronze Bevel Gear. fitted for either 1¼, 1⅜, or 1½ inch axles. Is made for Direct Drive, Rod Transmission, and also with chain Sprocket.



TUBULAR RUNNING GEAR FOR TONNEAUS
80-inch Wheel Base. 54-inch Tread.

The Transmission Gear is built on a new system. No Bevel Gears. Gears always in Mesh. Ball Thrust at each end of Shaft. Enclosed in Aluminum Case. Will transmit up to 20 H. P.

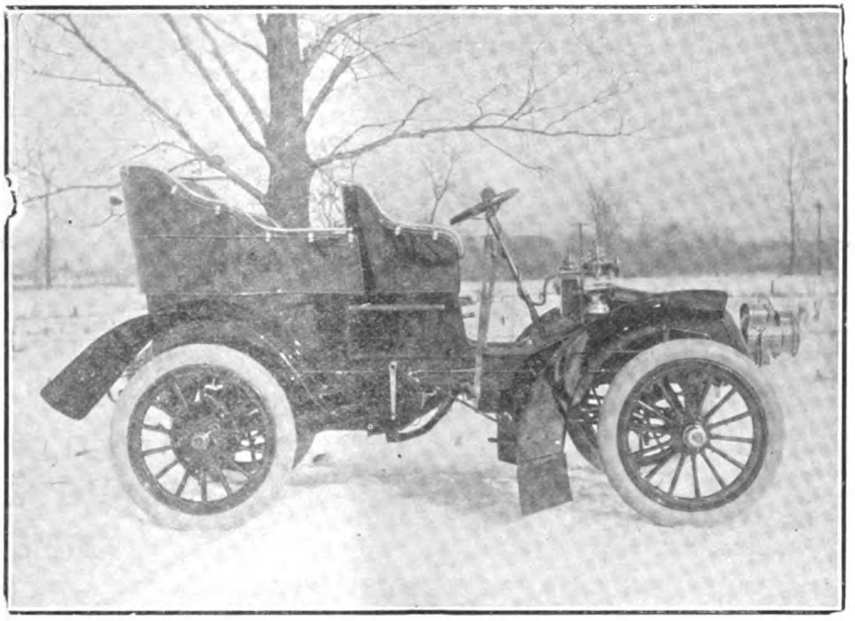
We make a Tubular Running Gear for Tonneaus that is a marvel of workmanship, finish and construction. All material is of the best and the Bearings are extra heavy. The Differential on this is fitted for either Sprocket or Bevel Gear.



WYOMA TRANSMISSION GEAR
3 Speeds forward and 1 Reverse.

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The PACKARD



ONE OWNER'S OPINION

YOU certainly deserve great credit in furnishing the public with such a well built, reliable machine, and I trust you will be treated by the public as you have seemingly endeavored to treat them in selling them a machine that is every bit that it is represented to be. Had there never been any other than a Packard Automobile placed upon the market, I am certain we would not be called upon to endure the small boy's cry, "Git a hoss." When I hear which I am inclined to think, "Get a Packard" and have joy, pleasure and happiness, long rides and many of them, small repair bills and annoyances, and few of them."

"ASK THE MAN WHO OWNS ONE."

Seats Five People. **$2500.**

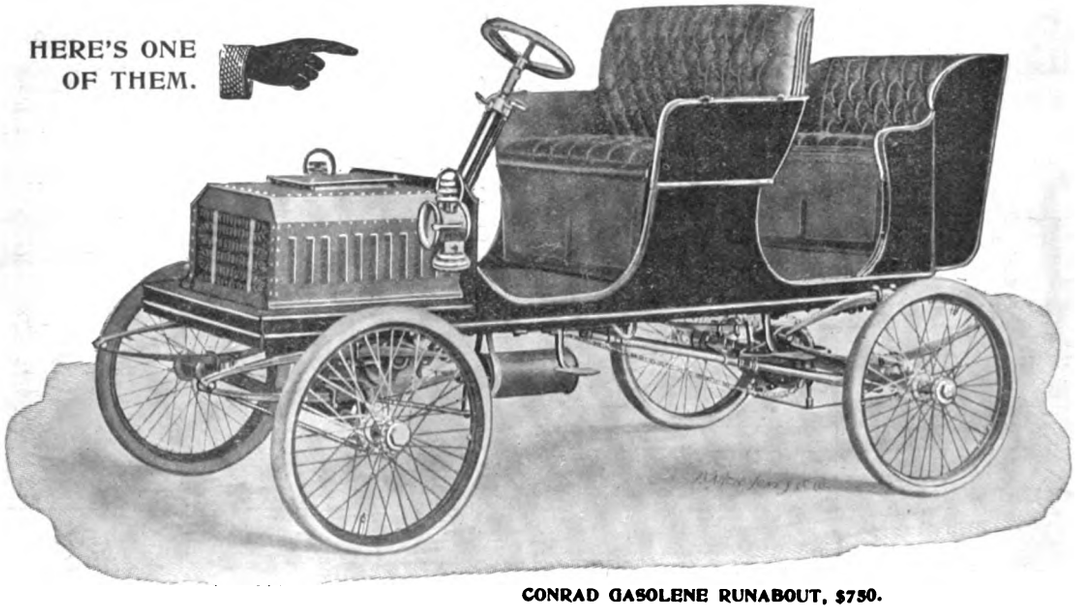
NEW YORK, Eastern Department, 317 W. 59th St.
PHILADELPHIA, Wm. F. Rudolph, 302 N. Broad St.
BOSTON, H. B. Shattuck & Son, 239 Columbus Ave.

Packard Motor Car Company,
WARREN, OHIO.

CHICAGO, Pardee & Co., 1404 Michigan Boulevard.
LOS ANGELES, Norman W. Church, 439 S. Main St.
SAN FRANCISCO, H. B. Larzalere, 1814 Market St.

Conrad Gasolene Automobiles

HERE'S ONE OF THEM.



8 H. P. VERTICAL DOUBLE CYLINDER ENGINE.

SLIDING GEAR TRANSMISSION.

TWO SPEEDS AND REVERSE.

WHEEL STEERING.

CONRAD GASOLENE RUNABOUT, $750.

12 H. P. Touring Car with Tonneau, $1250, will be illustrated in next issue.

THE CONRAD MOTOR CARRIAGE COMPANY, 1411-1419 Niagara Street, Buffalo, N. Y.

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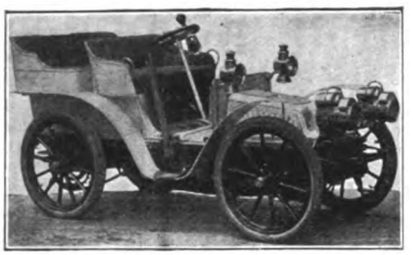
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FRENCH AND AMERICAN
AUTOMOBILES.

Agents for
THE
ELECTRIC
VEHICLE CO.

ACENTS FOR
Paris Automobile Societe Anonyme
HENRY FOURNIER, Mgr

11 & 18
H. P.
MORS
1903 Model
Attracted special attention
PARIS AUTO SHOW.



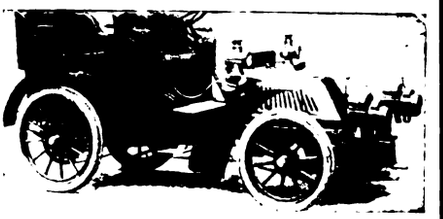
8 H. P. MORS.

Prompt Deliveries of
8, 11, 18 H. P.
MORS

THE
CENTRAL
Automobile Co.
1684 BROADWAY.
TELEPHONE:
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REPAIRS.

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10 H. P. PEUGEOT.

Prompt Deliveries of
RENAULT,
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Mercedes.

OPEN DAY AND NIGHT.

LARGEST AND BEST EQUIPPED AUTOMOBILE DEPOT
IN THE UNITED STATES.

ALL KINDS OF FRENCH AUTOMOBILE PARTS KEPT IN STOCK.

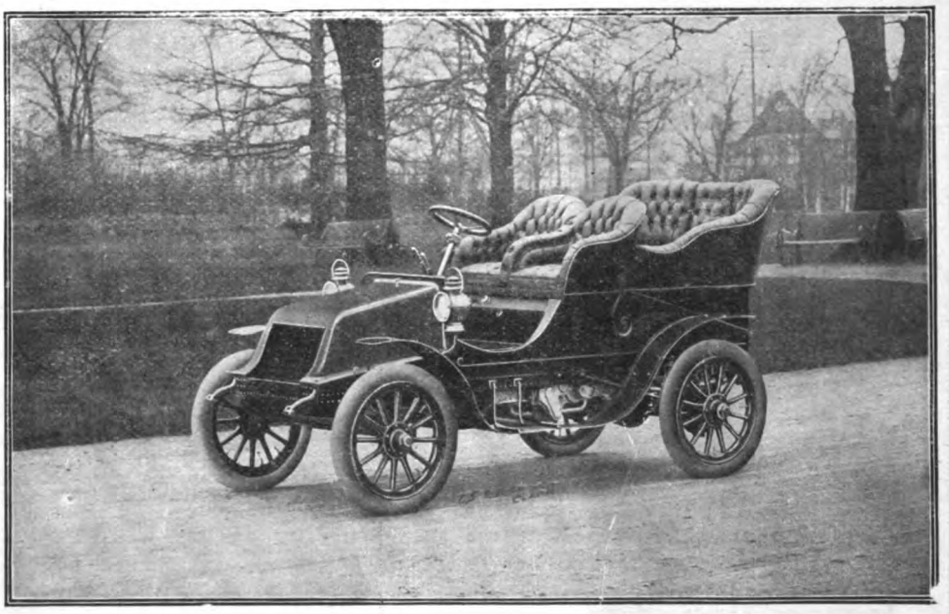
ELECTRICS CHARGED AND KEPT IN FIRST-CLASS ORDER.

WE ARE IN EARNEST

in advising you to place your order at once if you are going to get a

WINTON

So many folks are getting Winton 20 h. p. Touring Cars that somebody will surely have to wait. That somebody will be the man who trails in late with his order.



PRICE, COMPLETE, $2500

AGENCIES IN ALL THE PRINCIPAL CITIES

THE WINTON MOTOR CARRIAGE CO., Cleveland, U.S.A.

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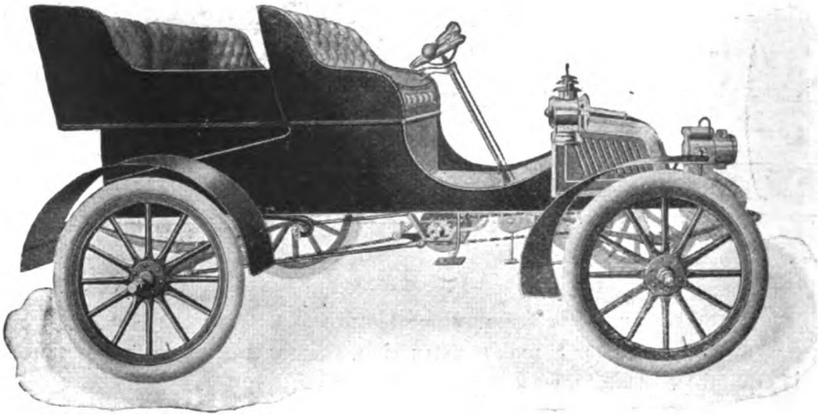
We are not included in **THE GET-RICH-QUICK CONCERNS** identified with the automobile trade.

WE ARE NOT LOOKING FOR "ALL THERE IS IN IT."

WE ARE BUILDING NOT ALONE FOR TODAY, BUT FOR TOMORROW.

The 7 H.P. ELMORE Runabout and 10 H.P. ELMORE Touring Car

ARE OFFERED AT REASONABLE PRICES AND BETTER CARS CANNOT BE HAD FOR AN AMOUNT OF MONEY.



WILL YOU TAKE THE TROUBLE TO INVESTIGATE ?

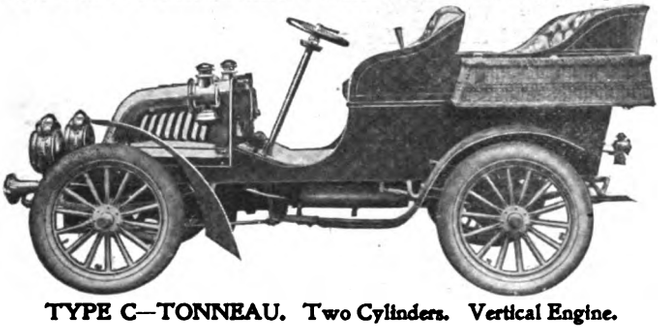
ELMORE MFG. COMPANY, - Clyde, Ohio.

BUILT FOR AMERICAN ROADS.

The U. S. LONG DISTANCE TOURING CARS

Are Preeminent for Speed. Safety, Reliability and Economy.

Our book is of unusual interest to Automobilists. Sent free on request.



TYPE C—TONNEAU. Two Cylinders. Vertical Engine.

Built for service, long runs and hill climbing, simply operated, free from vibration, each part easily reached, no intricate machinery to get out of order.

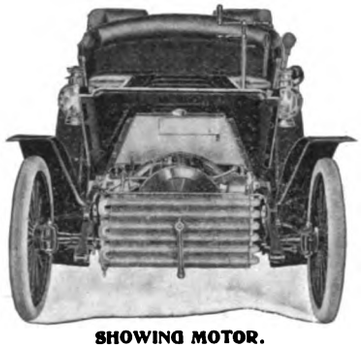
Type A—Runabout, $1,250.
Tyye B—Tonneau, 1,500.
Type C—Tonneau, 2,500.

U. S. LONG DISTANCE AUTOMOBILE CO.,

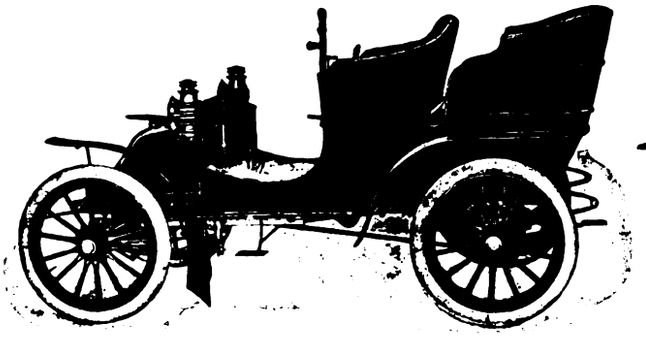
Factory, 307 Whiton Street, Jersey City, 110-114 West 41st Street, New York.

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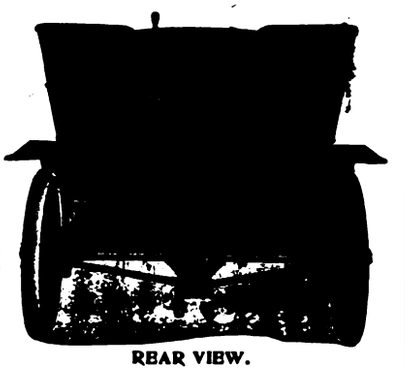
THE AUTOCAR



SHOWING MOTOR.



10 H. P. GASOLENE MOTOR.



REAR VIEW.

Is a Harmonious Whole.

It is not successful because of the excellence of any one feature, but because it is a better combination of carefully worked out details, a symphony of mechanical construction, the most satisfactory automobile production of the year—and the price is equitable. Catalogue and information upon request.

THE AUTOCAR COMPANY, - Ardmore, Pa.

A TRADE TERM:

"WESTON-MOTT QUALITY"

IN WHEELS.

ARTILLERY WOOD or WIRE.

GET WITH US.

WESTON-MOTT CO., Utica, N. Y.

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The NEW WHITE STEAM TONNEAU for 1903



AN AUTOMOBILE THOROUGHBRED.

The White Steam Motive power has made records in reliability contests, in races, and in every-day use which speak for themselves.

Write for full particulars, diagrams of engine, experts' reports and official results of important endurance contests.

WHITE SEWING MACHINE CO.,

(Automobile Department) CLEVELAND, OHIO.

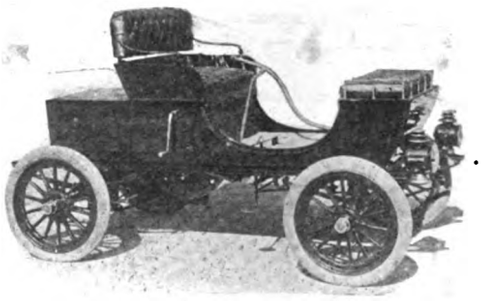
22 Union Square, New York, N. Y.
509 Tremont St., Boston, Mass.
309 Post St., San Francisco, Cal.
218 Woodward Ave., Detroit, Mich.
609 Main St., Buffalo, N. Y.
300 Rose Bldg., Cleveland, Ohio.
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F. O. BAILEY CARRIAGE CO., Portland, Maine.
WALTER C. WHITE, European Representative, 49 Princes Street, Westminster, London, England.

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THE POPULAR CAR.

$750.



Exclusive Design. Superior Construction. Unlimited Power. Climbs any Hill.

BUILT FOR BUSINESS EVERY DAY,
And Won't Fall to Pieces on the Road.

Catalogue and Terms Mailed upon Request.

CENTURY MOTOR VEHICLE CO.,
SYRACUSE, N. Y.

SPACE 49, PHILADELPHIA

A HIGH-CLASS GERMAN CAR.

The CHAINLESS

CUDELL

THIS MACHINE WEIGHS 1580 POUNDS.

NOISELESS One, Two, Four and Eight Cylinder Types. 3½, 4, 6, 8, 10, 12, 16, 20, 35, 60 H. P. runabouts, motorettes, touring cars, surreys, breaks, cabs, omnibusses, ambulances, broughams, racing cars, delivery vans, trucks. Direct drive on high speed. Bevel gear. All steel parts made by Krupp. Special safety devices making gasolene tank and can non-explosive. Band and block brakes. All closed carriages with removable tops, all pleasure vehicles with removable bodies, allowing business vehicles to be made of them. The most liberal firm for spare parts and tools. Look at the list. We invite inspection. All duplicate parts in stock. All cars single lever control, double suspension.

J. C. BRANDES, OFFICE, 28 W. 33d ST., NEW YORK.

U. S. Agent for CUDELL & CO., Aix-La-Chappelle.

TELEPHONE, 2754 Madison. **Agents Wanted Everywhere.**

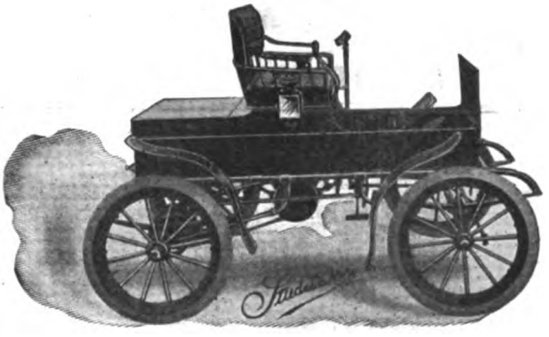
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The Motor Vehicle Repair & Storage Co., 121-123 W. 31st Street.

Studebaker Electric Automobiles

NO EXPERT CHAFFEUR NEEDED.

Can be Run any Day in the Year, by any Member of the Family.

Wide Touring Radius. **A Successful Hill Climber.**
Smooth Operation. **Reliable Brake Control.**
Great Strength of Construction.



Can be seen at the Following Repositories. Descriptive Catalogue on Application.

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Studebaker Bros. Co., 157 to 159 State Street, Salt Lake City, Utah.
Studebaker Bros. Mfg. Co., 317 to 319 Elm Street, Dallas, Texas.

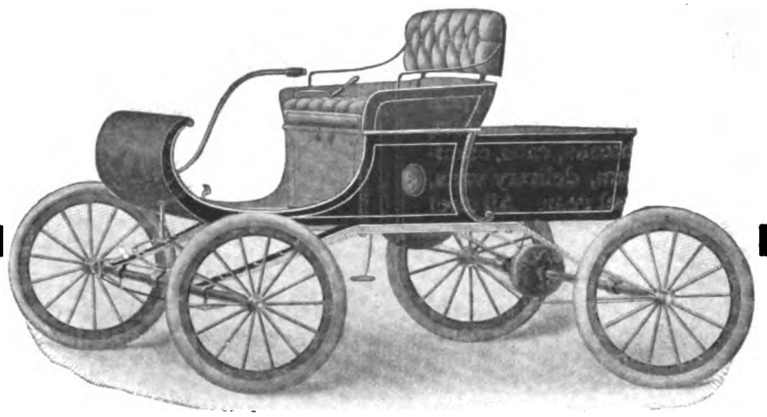
FACTORY AND GENERAL OFFICES, SOUTH BEND, IND.
First-Class Agents Desired in Territory not already Covered.

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ALL ROADS ALIKE TO

The Oldsmobile

THE BEST THING ON WHEELS.



PRICE, $650.00.

The pioneer runabout of the world and the only machine which can show such a record of use as evidenced by this letter. The OLDSMOBILE is built to run and does it.

BOUGHT ONE OF THE FIRST OLDSMOBILES MADE.

OLDS MOTOR WORKS, Detroit, Mich.

Gentlemen:—Please quote me price on Dos-a-Dos seat for my Oldsmobile. I feel pleased to express satisfaction with my Olds carriage. As you probably remember, I bought the first Olds carriage sold in Detroit. I have just completed a short trip in Canada of about four hundred miles, this being the third trip of the kind in one year, and in that same time my repair bills have not amounted to $10.00, and my carriage is still in perfect running order.

Awaiting your reply in reference to seat, I am,

Respectfully yours, P. DILLON.

No. 1462 Fort Street, West, Detroit, Mich.

SELLING AGENTS:

Oldsmobile Co., New York City, N. Y.
Oldsmobile Co., Cleveland, Ohio.
Oldsmobile Co., Githens Bros., Chicago, Ill.
Oldsmobile Co., Milwaukee, Wis.
Oldsmobile Co., Los Angeles, Cal.
Oldsmobile Co., W. C. Rands Co., Managers, Detroit, Mich.
Oldsmobile Co.—C. C. Moore Co., San Francisco, Cal.
Oldsmobile Co., Mohler & DeGresse, Mexico City, Mexico.
National Capitol Automobile Co., Washington, D. C.
Quaker City Automobile Co., Philadelphia, Pa.
H. B. Shattuck & Son, Boston, Mass.
Banker Bros. Co., Pittsburg, Pa.
Fisher Automobile Co., Indianapolis, Ind.
Olds Gasoline Engine Works, Omaha, Neb.
W. C. Jaynes Automobile Co., Buffalo, N.Y.
F. L. C. Martin Co., Plainfield, N. J.
Autovehicle Co., Newark, N. J.
F. W. Stockbridge, Paterson, N. J.
Mississippi Valley Automobile Co., St. Louis, Mo.
George E. Hannan, Denver, Colo.
Day Automobile Co., Kansas City, Mo.
Clark & Hawkins, Houston, Texas.
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John W. Chester Co., Nashville, Tenn.
A. F. Chase & Co., Minneapolis, Minn.
J. E. Richard, Columbia, S. C.
Rochester Automobile Co., Rochester, N. Y
Seager & Close, Tucson, Ariz.
F. E. Gilbert, Jacksonville, Fla
Texas Imp. & Machinery Co., Dallas, Texas
Abbott Cycle Co., New Orleans, La.
C. H. Johnson, Atlanta, Ga.
Sutcliffe & Co., Louisville, Ky.
Mason's Carriage Works, Davenport, Ia.
Adams & Hart, Grand Rapids, Mich.
Kline Cycle & Auto. Co., Harrisburg, Pa.

Agency for Great Britain: THE OLDSMOBILE COMPANY OF GREAT BRITAIN, 100 Queen Victoria St., LONDON, E. C.

WRITE FOR ILLUSTRATED BOOK TO

OLDS MOTOR WORKS, 1332 Jefferson Ave., Detroit, Mich.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, March 5, 1903. No. 23

MAKING A MERCEDES MYSTERY

American Incorporation Suggests big Things but Mum is the Word—Daimler Rights Infringed?

Whoever are the parties behind the Mercedes Co. of New York, which was incorporated at Albany last week with a capital of $2,700,000, they appear suspiciously anxious to remain in the background and enwrap their plans and purposes in mystery.

The directors, as disclosed by the incorporation papers, are Edward Bernhard, Philip Ahrens, C. B. Wynkoop and James Arnold, of New York City; Philip Huetwohl, of Brooklyn; S. B. Smith, of Plainfield, N. J., and Theophilus Parsons, of Hempstead, N. Y. Strangely enough the names of none of these appears in the New York directory; the only locatable incorporator is Theophilus Parsons, of Hempstead, who is connected with the law firm of Taylor, Anderson & Seymour, 35 Wall street. Mr. Parsons, however, is absolutely mum, and repeatedly referred The Motor World representative to Mr. Anderson. The latter was equally noncommunicative. The desire to dodge questioning and to withhold all information was strikingly apparent. Mr. Parsons referred The Motor World man to Mr. Anderson, while the latter in turn stated that his partner, Mr. Taylor, had the Mercedes matter in charge and he was, unfortunately, out of town. He (Mr. Anderson) knew nothing about it and declined to be interviewed or to confirm or deny certain reports bearing on the project with which his firm is identified. These reports were to the effect that Messrs. Harry Payne Whitney, James B. ("Diamond Jim") Brady, and Kessler & Co., the bankers, are the real parties behind the new company. All of those named are out of town or inaccessible.

The Daimler Mfg. Co., of Long Island City, who are understood to own the rights to all the Mercedes patents, and also the name "Mercedes," state that they are in absolute ignorance of the whys and wherefores of the Mercedes Co. of New York. They maintain, however, that the right to the name of the Mercedes is theirs, and that as soon as they are able to locate the responsible parties of the New York incorporation they will, in all probability, make themselves heard in no uncertain fashion.

Reappearance of the Pope.

The Pope Mfg. Co., which was the pioneer bicycle and one of the earliest automobile manufacturing concerns of this country, making Columbia cycles and cars, was incorporated last week at Trenton, N. J. The capital stock was given at $22,500, of which $2,500 is 6 per cent cumulative first preferred, $10,000 5 per cent non-cumulative second preferred until February 1, 1905, and $10,000 common.

The original Pope company was a Maine corporation. It was absorbed by the American Bicycle Co. when the latter was formed in 1899. The present incorporation has occasioned no little speculation, especially as the time is almost at hand when the assets of the American Bicycle Co., including not only its bicycle factories, but those of the International Motor Car Co. as well, are to be offered for sale in furtherance of the pending reorganization plan.

When this sale takes place it is not unlikely that the new Pope company will bid in the property and operate it as the parent concern.

Kirkpatrick Goes With Peerless.

After exactly ten years' joint service with the Hartford Rubber Works Co. and the American Dunlop Tire Co., W. H. Kirkpatrick will hereafter devote himself to the sale of automobiles instead of tires. He assumes the position of general sales and advertising manager with the Peerless Motor Car Co. In the prosecution of his new duties he will make his headquarters at Cleveland.

Few men have a more extensive acquaintance in the trade than Kirkpatrick. In the last decade he has become so identified with Dunlop tires that the two names are almost synonymous. The Hartford company's loss is the gain of the Cleveland concern.

WILL BUILD MOTOR WAGONS

Searchmont Directors Vote to Engage Largely in That Field—Officers Also Elected.

With an eye keen to the future, the Searchmont Automobile Co., Philadelphia, at its annual meeting on Thursday last, was definitely committed to the commercial vehicle, not in a mincing fashion, but in a wholehearted way.

For more than a year the Searchmont people have had a Panhard delivery in use, and they now have two deliveries in actual service, with which they do all their own hauling. They have done this in order to find out what is required in a satisfactory delivery car, and, believing that they now know, they purpose engaging in the manufacture on an extensive scale. The designing department has already done considerable work along this line, and the company expect to have gasolene delivery cars ready for the market in quantities next fall, although it will be a few months before they are ready to make public their plans or to quote prices. The new department will not, of course, in any way interfere with or curtail the production of Searchmont pleasure cars.

At the same meeting at which this decision was reached the following officers and directors were elected for the ensuing year: President, G. Blum; vice-president, Wade Chance; secretary and treasurer, Barclay H. Warburton; general manager, W. D. Gash; directors, G. Blum, Barclay H. Warburton, Spencer Trask, E. R. L. Gould, E. W. Robinson, Acosta Nichols, W. D. Gash, J. S. Bunting and Wade Chance.

Apple Assigns his Patents.

Three patents granted to Vincent G. Apple have been assigned by him to the Dayton Electrical Mfg. Co., Dayton, Ohio, who will manufacture and market the inventions. They are Nos. 720,550, 720,652 and 720,653, all issued on February 17 last. The first is for an electric circuit and polarity indicator, the second for a speed regulator and the third for an improved storage battery.

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ROAD RULES HELD UP

Eno-Canton Ordinance Again Called up and Action is Again Postponed.

Hopes of automobilists and other road users, who have been seeking ever since the creation of the Greater New York to have a set of sensible traffic ordinances for the city passed, were rudely shattered on last Friday, when they attended what it was thought would be the last public hearing on the "rules of the road" ordinance.

More than a year has elapsed since Alderman Joseph Oatman introduced the first set of rules of the road. There have been a dozen hearings on them, and they have been modified in all sorts of ways. Finally an agreement of compromise was reached on the main question at issue, that of speed, and it was thought that all would be smooth sailing. Then William C. Eno, with the help of Borough President Cantor, introduced a complete new set of rules. These were taken with other suggestions and an amended ordinance framed that it was thought would suit everybody.

When the hearing was called before the law committee of the Board of Aldermen, President Shattuck, of the Automobile Club, said that the ordinance was satisfactory, though he thought it would be improved if all vehicles were prohibited from stopping along the curb on Broadway during the busy hours of the day. The cyclists and the Committee of Fifty were satisfied with the speed limits of eight miles in the busy streets and fifteen miles in the suburbs.

Josiah Pumpelly caused a hitch by introducing the question of hitching horses and after that Borough President Cantor, the champion of the Eno ordinance, proposed that the hearing be postponed for a week in order that everyone might have a chance to study the amended measure and propose changes. This was agreed upon and so the end is not yet in sight.

Syracuse Still Wants State Association.

The project to form a New York State league of automobile clubs is once more afoot, and is to be pushed with vigor. As before, the Automobile Club of Syracuse is the prime mover, and it will not be its fault if the scheme comes to naught. It is arranging to call an early meeting at Syracuse for the purpose of effecting an organization.

At a meeting of the club on Friday last Secretary F. H. Elliott brought up the matter, and secured the appopintment of a committee to bring it to a head. President Wilkin appointed H. W. Smith, W. L. Brown and F. H. Elliott as the committee. Letters will be sent to the clubs at Buffalo, Rochester, Utica, Auburn, Herkimer, Oneida and Albany asking them to send delegates to the meeting which will be held shortly for the purpose of perfecting the organization.

It is believed by the Syracusans that an organization of this kind can do much to influence legislation at Albany, as well as to further the cause of good roads. The need of concerted action on both these points, but especially the former, is urgent, and the more intimate and friendly relations that are certain ta result from the formation of an association are looked upon as highly desirable.

Already H. W. Smith, of the Syracuse club, is being urged as just the man to serve as president of the proposed association and guide it to success. Accordingly he will be boomed ior the office, with the formal indorsement of the club.

Tug for Vanderbilt Patronage.

Bearing upon the dealings between garages and chauffeurs, an amusing incident occurred in New York recently. While W. K. Vanderbilt, Jr., was in California his chauffeur removed his motor cars from the place where he stored them all last year to another storage station. Mr. Vanderbilt returned last week and ordered the vehicles taken back to the garage where they were before. The manager of the place where they were for a short time was asked how he liked the deal. He replied, "I'll have them back again." The proceeding suggested object, competition, inducement.

May Build in Boston.

Although now in the possession of what is probably the finest automobile clubhouse in the country, the Massachusetts Automobile Club is not satisfied. A project is on foot to erect a building to replace the present quarters, the cost being placed at $280,000. A site near the present one, i. e., on Boylestonst., near the Fenway, is in view. The proposed structure will accommodate 125 automobiles, while the basement will contain a machine shop and an emergency garage. The two upper stories will be used as clubrooms and will contain many novel features.

Export Year Starts Well.

Automobile exports started the new year with a great, big gain. During January $114,374 worth of motor vehicles and parts were sent abroad, as against a beggarly $27,311 for the preceding January. For the seven months of the fiscal year, too, a splendid increase took place. For the seven months ending January 31, 1903, $602,999 worth of goods were shipped to foreign countries, as against only $394,682 for the corresponding period of the previous year.

Cadets at This Show.

One of the features of the Washington, D. C., automobile show, which opens on March 23, in the Light Infantry Armory, is the automobile battery of the Northwestern Military Institute. The cadets will bring one of their military automobiles equipped with rapid fire gun, and also one of their automobile bicycles. They will set up a camp outfit and give exhibition drills with those new implements of war.

A. A. A. OPENS THE DOOR

Decides to Become Truly American and Welcome Individuals as Well as Clubs.

As was foreshadowed at the preceding meeting, the American Automobile Association has practically decided to admit individuals to membership. Incidentally, it is holding forth an olive branch to the American Motor League, looking to the consolidation of the two organizations.

The matter was brought up at the monthly directors' meeting of the A. A. A., held at the A. C. A. clubhouse on Tuesday afternoon. Dr. J. A. Chase, of the Rhode Island Automobile Club, presided The other directors present were W. E. Scarritt, of the A. C. A.; W. J Stewart, of the New Jersey Automobile Club; Dr. W. C. Millbank, of the Albany Automobile Club, and F. C. Lewin, of the Philadelphia Automobile Club.

Secretary Butler reported on the changes that would have to be made in the constitution and bylaws to legalize the admission of individuals. After some talk, during which it was made plain that there was no opposition to the change, this committee was appointed to make the necessary alterations: Messrs. Scarritt, Stewart and Butler. It was stated that inquiries had been received from Arkansas, Maine and Kentucky asking for information regarding the matter.

To Secretary Butler was deputed the task of conferring with the representatives of the American Motor League to see if an amalgamation or combination scheme could not be decided upon.

Two applications for sanctions for race meets were received. One was from the Automobile Club of Syracuse asking for a date in September, the other from the Massachusetts Automobile Club desiring a May date for a meet at the Readville track.

Owing to the absence of A. R. Pardington, of the Long Island Automobile Club, no action was taken on the new racing rules.

'Frisco Wants a Show.

The Automobile Dealers' Association of San Francisco is seeking support for a show to be held in the Mechanics' Pavilion. A chart showing the spaces has been prepared, and a solicitor sent out among the automobile manufacturers and agents and the cycle and sporting goods dealers to ascertain just what space each proposing exhibitor will take. The automobile dealers are agreed that a show is just what is wanted and would do more to create business than anything else.

For the Florida Races.

Three Peerless racing cars of 80 horsepower each, with engines capable of being run up to 1,500 revolutions, are being built at Cleveland. C. G. Wridgway, of New York, expects to drive one of them in races on tracks and perhaps on the Ormond-Daytona beach, at Florida.

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THE CHAUFFEUR; A PROBLEM OF THE DAY

Its Far-Reaching Importance Induces Both the Automobile Club of America and the Manufacturers Association to Attempt its Solution—Schools and Licenses Suggested—Some Surprising Tricks of the Chauffeurs' Trade and how They are Played—Opinions From all Parties Concerned, the Chauffeur Included.

Improvement of the chauffeur's unhappy lot, or happy lot, as the case may be, is a subject that is assuming proportions of much moment. Shall there be an automobile board of trade to regulate the dealings between the garages and the chauffeurs and to stamp out of existence the practice of paying commissions on sales, on storage bills and on all repairs; or shall a board of trade be organized and the practice recognized and the commissions to be paid cut to a minimum and made uniform?

Shall the various storage and repair stations and sales depots take out license certificates from the Automobile Club of America, under an agreement that the garages doing this shall pay no commissions and that club members shall not patronize any unlicensed station?

Shall there be a school of instruction for chauffeurs organized by the Automobile Club and also by the National Association of Automobile Manufacturers, or shall they combine in conducting a single school, with a system of issuing certificates of graduation and competency and run an employment agency as an adjunct?

Shall the chauffeurs, organized as an industrial union, make a stand for the perpetuation and recognition of the commission practice and fix upon a schedule of percentages and wages?

When the far reaching significance of the above question is considered, it is important news to know that all these moves are being seriously considered.

The chauffeur question is becoming a serious one; indeed, it is already serious, and it is one that presents many phases. The spirit of disquietude is abroad. There is a belief extant that the whole lot of chauffeurs need improving also that a whole lot more of them are needed who have a lot more of ability. There is another belief that a lot of reform is needed in the operations of some garages and supply stations, where bills are large and the men are "flush" with "scale" money.

DIFFERING OPINIONS.

Opinions differ considerably among those in the trade as to the practicability of organizing and conducting a school that will turn out men competent to run and keep in order all sorts of cars, and also as to the possibility of stamping out the "scale" system. It is generally agreed that if anything is to be done with respect to stopping the payment of "scale," as fees and commissions are called by the men, it must be done at once or the system will have taken root too deeply to be destroyed. Some are inclined to believe that even now it will be impossible to root up the custom. The reason given for this opinion are (1) that under a board of trade, or any other co-operative plan, all the tradesmen would not act in good faith and concertedly in an effort to stop the abuse, but that some would seek surreptitiously to gain an advantage in patronage by paying commissions even while under pledge not to do so; (2) that the opportunities of the chauffeurs to "queer" business are so great that they could by opposition seriously disturb the relations between buyers and sellers; (3) that some of the employers recognize the system and are not only willing that their men shall take commissions, but insist upon their getting them. It is these considerations that make the matter a serious one, and the solution of the situation very problematical.

A representative of the Motor World has been quietly investigating the situation concerning these matters, with the sole view of ascertaining how serious it is, what its phases are, what the sentiment is regarding it, and what can be done about it. The result has been only that of bringing out very plainly the fact that there are conditions to be confronted that demand something more practical than theories for their treatment. So far as has been gone, no conclusion can be reached relative to the extent of the commission practice, or how pernicious it it, or how it can be eliminated, or even if this is desirable and possible.

A SCHOOL FOR CHAUFFEURS.

In the course of the investigation it was learned that some important activities are being contemplated, as has been indicated, by the Automobile Club, the National Association of Autotmobile Manufacturers, by the retail dealers and storage men, and by the chauffeurs themselves, although the news of these doings has been kept secret. The Automobile Club governors have decided to appoint a committee to devise a plan for stopping the payment of commissions, and the feasibility of some kind of schooling and standard of examination for chauffeurs has been discussed and is being seriously considered. The N. A. A. M. also has under consideration a plan for having chauffeurs pass examinations and get certificates. Several dealers are in favor of a local organization for self-protective purposes. The chauffeurs have held meetings and effected a temporary organization, which is to have the character of a trade union and be avowedly for the purpose of keeping up the standard of wages.

While the matter of paying commissions to men has been made prominent here, it is not by any means the only question with regard to chauffeurs and owners that commands attention. How many establishments are paying commissions on storage and repair bills to the chauffeurs of private cars it is impossible to say. Sufficient is it that a few very prominent stations are doing it. Although all of them will deny it to customers and generally, four places where business is brisk were found at which the managers admitted that they followed this custom, and all of them except one said they would be glad to get away from the practice if possible. The excepted one seemed to accept the custom as one that cannot be dispensed with, and remarked that the less said about it the better. The whole inquiry of the Motor World man brought out details that do not favor this sentiment of saying nothing about it. Some concerns are suffering because they won't, and others because they do recognize it. There seems nothing to be gained by refraining from open discussion of it, but the possibility of much to be gained by bringing the subject into the open and viewing all sides of it. Said one man who steadfastly has refused to yield in any respect to demands for commissions:

HIS BUSINESS INJURED.

"There is something to be said on both sides of the question, I imagine. We do not pay a cent to any man who operates a car for a private owner and stores with us; but I know that we are losing business all the time by not doing so. We lose business by chauffeurs preventing their employers from storing their cars here, and we lose it after getting cars in by having the chauffeur influence the owner to take them away.

"Why can't we prevent this by appealing to the owners and telling them that the chauffeur wants to move because we do not fee him? That is not so easy as you imagine. These chauffeurs are important factors. They are more important than coach-

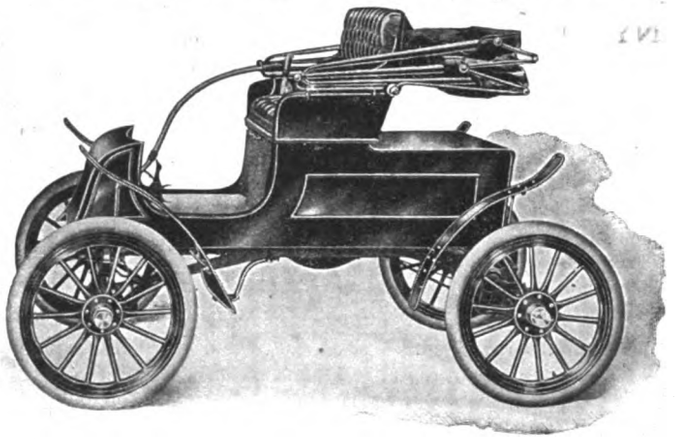
(Continued on page 909.)

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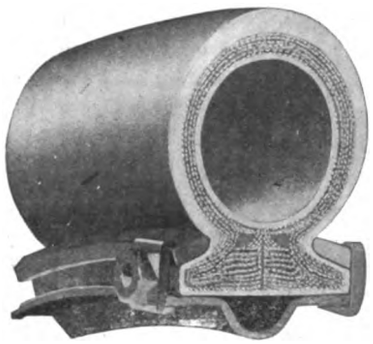


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The Chauffeur Question.

The problem presented in the relations between chauffeurs, their employers, the dealers and the storage men is set forth in all its phases in another part of this issue. It is the first time that this matter has been thoroughly aired. The conditions revealed by the story have existed for some time and the trade has not been ignorant of them. The Motor World is the first publication having the enterprise to investigate the matter thoroughly and the courage to print the facts of the situation. It is done now because the plot has been growing thicker and the question of how to deal with the conditions has become a live and palpitating issue of the moment. It were better some times that such matters should not be aired, but the time has arrived when this one could no longer be ignored. The Automobile Club has taken it under consideration and has been contemplating action that, if taken, would unavoidably lead to publicity. Learning this The Motor World has spoken.

In the situation as presented, even those who thought they knew something of the tricks of the trade will find new points. An effort has been made to set forth the whole impartially, showing the arguments that make for and against the system of paying commissions. The names of the persons interviewed have been withheld for reasons that are obvious. In places the circumstances of the person speaking have been slightly modified to prevent identification by those who like to make shrewd guesses, but the accuracy of the conditions pictured has been preserved inviolate. Though the clues that may seem to indicate the identity of the speaker have been purposely made misleading, the men interviewed were all of the highest standing in the trade, and dealers of wide experience.

There are several pieces of news in the article that are of peculiar interest, such as those that the Automobile Club has referred the subject to a committee and that the Manufacturers' Association is considering the issuance of chauffeur's certificates. The remarks of the different men of experience furnish much food for cogitation. After reading all the different sides presented it becomes a question whether the Automobile Club, which has but recently resented the interference of the manufacturers with its plans, should attempt to do anything toward regulating the business of the dealers. If it is said that it should do so for the protection of its members, the answer is that its members are men who should be capable of taking care of themselves in business transactions, without being imposed upon for the want of any guardianship by the club. It is but a step beyond helping members to transact the business of storing their cars to helping them in the purchase of them, and but a step beyond that to the regulation of the affairs of the manufacturers. If the dealers want their affairs regulated they should be able to organize and attend to the regulation themselves. Evils undoubtedly exist, but it is a question if interference from the outside can help matters.

The statement of the man who says that all such matters will eventually adjust themselves according to trade conditions, is a wise one. No business man wil continue to pay tribute if it does not help his business. If he can gain trade by paying commissions to whatever sort of agents he will do it in spite of ethics. Sentiment is not his guide, but commercial sense is. If a dealer chooses to pay 50 per cent commission, or to store cars free because he thinks it will help his business, that probably is entirely his own affair. The law of competition will prevent him from imposing exorbitant rates upon customers. Department stores often sell goods at cost for advertising purposes. Why not?

The suggestion of the great increase in the demand for chauffeurs that is certain to follow the sales of thousands of touring cars is one that "must give us pause." There is no visible supply.

The idea of having a school is an excellent one if it is practicable. Such an institution would need to be very efficient and to be that it would be expensive. The suggestion of the chauffeur, to put the pupils out as extra men without pay in different shops, seems to be a good one if it is feasible. They would need careful supervision by instructors from the school, and even then they would be apt to be more nuisance than help to the men managing the shops. However, by the patching together of different ideas, the manufacturers, and they are the ones with the most at stake, some plan of instruction that will not involve a prohibitive expenditure may be worked out.

If men of ability and of good character can be supplied the other phases of the chauffeur problem are apt to be solved, as are the problems of transmission gearing, by the test of practicability in operation.

Flaws in Revised Road Rules.

Now that the "rules of the road" ordinance has been put back a week for consideration of its provisions, it is well to mention one feature of it that seems particularly absurd, even stultifying.

This is to be found in Article VI, Section 1, on lights. Here it is stipulated in substance that every vehicle shall carry a light in front at night, and that automobiles shall carry a red light behind. It is not required of other vehicles that they shall carry rear lights.

The nonsense of this is so obvious that one is at a loss to understand how it has passed muster thus far. The ordinance has been read and no objection has been made to this phase of it.

If any class of vehicles is to be exempted from carrying rear lights it should be automobiles. The attempts at regulation of them are inspired because they go fast—faster than horse drawn vehicles. The danger from au-

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tomobiles is generally supposed to be to those in front of them and not to those behind.

This being so, it is plain that the horse drawn vehicles are the ones that should have rear lights. The automobile overtakes the horse drawn vehicle going in the same direction more often than the reverse occurs. There is danger of an automobile running down a farmer's wagon or other vehicle on a country road at night when it has no light. There is very little danger of a vehicle drawn by a horse running into an automobile, even if the motor car has no rear light and the road is dark. In the first place, the horse is not apt to overtake the motor car and if he does the animal's instict and sense of smell will prevent a collision.

At the Automobile Club very recently, two members testified that the greatest danger on the road in their experience had been that of running into the rear of a vehicle going in the same direction at night on a country road.

It seems to be very plain that for the protection of all the law should compel horse drawn vehicles to carry lights at the rear, whether automobiles do or not. The best revision of the law would make it read so that all vehicles except bicycles should carry rear lights. There is no way in which a bicycle can conveniently carry a rear light, and the narrowness of the vehicle makes it possible for it to carry a front light so that the side glare of it can be seen from behind.

There is to be another hearing on the ordinance to-morrow, Friday, and this matter should be brought up then.

Another point of lesser importance, though it might be the cause of legal controversy, is worthy of attention. The use of the word "restive" relating to horse in the same section of the bill is wholly unnecessary. It might make a pretty legal squabble to prove whether or not a horse was restive. If an automobilist saw a horse quiescent and showing no sign of fear of restlessness, he might justifiably refuse to recognize the arbitrary holding up of a hand by the driver as a signal for him to stop and go on. The horse might run away. The automobilist might be able to prove positively that the horse was not restive when his driver gave the signal, and so under the law he was not obliged to stop. The driver of the horse might then prove that the horse had been known for years over all the countryside as a restive animal. In the original Scovel bill that was introduced in the New Jersey Legislature the word restive was used in a similar clause, and it very sensibly was stricken out when the bill was revised and the Williams bill introduced. It should be stricken from this ordinance.

The whole section relative to automobilists stopping when a horse driver holds up his hand is a bid for mischief anyway. It is well intended, but motorphobes could have a lot of fun bullying automobilists under the cloak of this law.

Honeycomb Coolers.

Cooling systems are such an important part of all high-powered gasolene cars that it was inevitable that sooner or later they would come in for a larger share of attention. And this in spite of the fact that hot water, even to the point of boiling, in the jacket is conducive to engine efficiency.

The honeycomb radiator is the outcome of this increased attention. Just how much of its present vogue is due to its having originated with the makers of the Mercedes car is problematical. But it is reasonable to suppose that it is considerable. At the same time its undeniable merit has also been a potent factor. Did it not deserve some at least of the encomiums bestowed upon it, its popularity would not have been as well assured as it is.

The fact is now frequently lost sight of that the chief claim made for the honeycomb cooler, when it was brought out a couple of years ago, was the saving in water rendered possible by its use.

In other words, it was not so much that it cooled the water more effectually, as that this cooling resulted in a much smaller consumption of the precious fluid. This economy possessed a twofold advantage: It reduced weight and bulk—smaller tanks and less water being permitted—and it obviated more or less frequent filling of tanks. This meant a saving of labor even when there was a plentiful supply of water; and when there was not there was no need to worry about it. What a difference this meant will be appreciated when the original claim of the Mercedes people is recalled, viz., that a day's run could be made on a consumption of only three pints of water.

It will scarcely be denied that the principle of the honeycomb cooler is a thoroughly good one. The minute divisions of the water, with currents of air surrounding them, cannot but cool the water rapidly and greatly lessen its evapodation. As this is the object of all radiating systems, it is obvious that the one which does it most expeditiously and effectively possesses features that preclude the possibility of its being overlooked. That is exactly the position of the honeycomb radiator.

There are some features usually employed in connection with it that are not so readily commendable.

One of these is the use of a fan for inducing a current of air through the cells of the comb. As generally placed—just back of the radiator—it is an open question whether it is of much real service. The speed of the vehicle and the position of the radiator ensure the passage of a large amount of swiftly moving air through the orifices; and we cannot help feeling considerable scepticism as to the inducing qualities of such an artificial device as a fan, no matter how swiftly it may revolve, a scepticism that not even the general adoption of the fan by European designers can dispel.

As to the practice of the Cannstadt firm in fitting the 1903 Mercedes with a flywheel in the form of a fan, it must be viewed with even more suspicion. How it can play any great part in inducing air through the radiator, situated as it is several feet away from it, and with four cylinders interposed as a barrier between, passes comprehension.

At any rate it is a refinement that has as yet failed to appeal to many makers.

An Advantage Overlooked.

So much stress has been laid on the most patent feature of the new type of steam car, i. e., its following the gasolene lines, that other and even more cogent reasons for its adoption have been overlooked.

It is even more important that the operator of a steam car should have all the appliances needing watching in front of him than in the case of the gasolene car operator. The former has to give more attention to them than the latter. He must frequently consult his water gauge, his steam and pressure gauges, to watch his burner, etc. With these in front of him his attention is never taken entirely off the road.

With the boiler and the engine, together with their attendant appliances grouped in front, the natural, the accustomed, method of disposal is followed. The locomotive engineer finds such arrangement indispensable. The motor vehicle operator finds equal advantage in it, and does not fail to express his satisfaction with the new order of things.

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THE CHAUFFEUR; A PROBLEM OF THE DAY

(Continued from page 905.)

men. They are a higher class of employe than the driver of a horse, and there is more to be left to their judgment. Furthermore, an automobile is a vehicle that lends itself readily to the purpose of a man when he wants to make its owner dissatisfied with the treatment is gets at the place where he stores it. There are a thousand ways in which a chauffeur can give your place and your product a black eye if he wants to. It is of little use to explain to a man. The chances are that he has previously been convinced by circumstantial evidence that what his chauffeur says against your place is true. The chauffeur manufactures the evidence, but is of a physical kind having to do with the condition of the car, and it is very convincing. Suppose, though, the man is made to understand that the chauffeur is the cause of the whole trouble, and that he, the owner, really has no cause for dissatisfaction. This makes it no better. The owner does not want a chauffeur who is grumbling all the time. He wants him satisfied. He has no time nor inclination to go into the merits of the thing. It is easier to say 'all right' when the chauffeur proposes a change of garage. A man whose time is fully occupied with either business or society affairs has to leave a great deal to his chauffeur. He wants a man to whom he can leave all the details, and he does it usually whether the man is wholly trustworthy or not.

"Those are the conditions under which we labor. The chauffeur, having so much to say, it would be surprising if he did not demand a 'rakeoff' for delivering his employer's business to a place. This is only human nature. He feels that it is right for him to have a commission, and if he don't get it he makes us feel his power.

"I am in favor of some kind of an organization of the trade with a rule under which any man caught paying a commission to a chauffeur would be mulcted a heavy fine.

SCARCITY OF CHAUFFEURS.

"This matter promises to get worse before it improves. You want to understand that there is already a scarcity of really good chauffeurs. I mean really first rate men, who are clever at steering a car and can keep it adjusted and tinker it properly. I do not know where to put my hand on such a man, and there is a demand for them. There is going to be more of a demand. Here, for instance, is a concern going to turn out 500 touring cars this year. The buyers will want men for them. Where are they coming from? The shops are not turning out enough. Each shop has usually only one or two thourough mechanics, and they are not necessarily good drivers of a car. The shops want to keep those men, and in many cases the men won't accept positions as chauffeurs even at an increased wage, for they hold it to be a menial employment. In spite of this, we have trouble here every summer trying to keep our force, because of men coming along and offering them more money to be chauffeurs. The really capable men are the ones who won't go as a rule, and so I ask where are our new expert chauffeurs to come from?"

Said another man, the head of a big establishment, who tacitly acknowledged that the commission system was practised in his place:

"I shall be very glad to see the time when I can kick the whole system out of the place. I cannot now, but I expect to see the time when things will be so that I can. There are a good many difficulties in the way of stamping out the thing.

HOW HORSEMEN DO IT.

"In the horse business, you know, this sort of thing has gone on for fifty years. Everyone knows about it, and there is no attempt to conceal it. Every horseshoer, carriage builder, feed man, harness man and even the sellers of axle grease have to 'see' the coachman. They expect to do it. With every strap and buckle bought goes the coachman's question of 'what is there in this for me?' The employers of the coachmen are acquainted with the practice and make no attempt to stop it, so what can the dealers do? Of course what the coachmen get comes out of the employers in the long run, but I know of men who know this and yet actually 'tip off' their coachmen when they have made a new purchase to go and get their commission. If the coachmen got no commission and the harness or other articles were sold to the employer less the amount of the commission, there would be trouble all around. In the first place the business rivals of the seller would be down on him for cutting prices. Then he would have an enemy in all the coachmen and his goods would break and give anything but satisfaction. He would lose the good will of his customer, of the coachmen and of his fellow dealers.

"There are signs that similar conditions are beginning to exist in the automobile business. I had a man come to me and tell me that he was going to take his machine away. That was before I was paying his man 'scale.' I asked him if everything was not satisfactory and he was evasive. I told him I suspected his chauffeur was dissatisfied because he was not getting a 'rake off.' Then he admittted that this was the reason why he was going to move. Other chaffeurs got fees in other garages, he said, and he wanted his to have all the perquisites he could get. He was a good man and he wanted to treat him right. I was amazed. I said to him: 'I suppose you appreciate the fact that when commissions are paid that they come out of your pocket in the end.' With smiling composure he replied:

OWNER FAVORS "SCALE."

"'Yes, I understand that, but I want my man to have it, because it does not save me anything if he doesn't get it and he is grouty. I mean that the rates in places that don't pay commissions are just as high as where they do.'

"Now, what are you going to do in the face of such a sentiment on the part of owners? Besides, there is something in what he said. I would join an association of dealers to stop the practice, but I doubt if it would be effective. Would the storage men on the strength of paying no commissions be willing to make a reduction in the rate of storage? Owners like the one I have quoted would expect it. He figures it out that where his man don't get it the storage house keeps it, and he has to pay the same either way. Other owners would come to the same way of thinking, and it is the way the horse owners think. On the other hand, would the dealers keep faith? Would not some of them try to steal a march on the others by paying premiums secretly to get business?

"The same trouble seems to run through every business. A friend of mine in the oil business was telling me recently how the buyer of a customer made him add to the price quoted and give him the difference. I asked him why he did not go direct to the firm of the buyer and tell them he could furnish the oil for so much less if he did not have to include a 'rake off' for the buyer. He answered: 'That would be of no use, for we have tried it in other cases. Such men, just like your chauffeurs, hang together. Even if they discharged the buyer we would lose that firm's trade. The oil would be dirty or have something the matter all the time. It would cease to give satisfaction just as soon as we made any such move. We have to stand for it, that's all.'

POWER FOR MISCHIEF.

"You have no idea how easy it is to queer the work done on automobiles. If we stopped paying commissions not a single repair job that we did would be right. The storage vehicles would be giving trouble all the time, we would be blamed and would lose our customers. I don't know how places get along that don't pay commissions. They don't have the class of customers I do, that is certain. On the other hand, by paying commissions you have something of a hold on a chauffeur whose employer 'boards' his car with you. For instance, I heard a chauffeur making a great 'kick' one day about the way his car had been washed. He had found a couple of small dirty streaks on the body after the washers had finished with it. I told him to shut up. He said we were paid to keep the car clean. I told him he, too, was getting paid at both ends and that it would be a small matter for him to take a cloth and wipe off the dirt. He did it. It is very hard to get a car perfectly cleaned. I have looked one over and seen not a mark at night by the electric light and in the morning found a big streak of dirt on it. If a man wants to be mean about such things he can do it easily and soon turn our patron against us. I would be glad to see the whole business stopped, if it can be."

Still another man, one who has a big establishment and is "on the fence" as yet,

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not having decided whether to fight it out or yield, said:

THE DEAL WITH THE GARAGE.

"At present I do not pay any commissions. I do not know what I am going to do in the future, though. I think it is a most pernicious and baneful practice, and should be stamped out. I have men come to me right along and say:

" 'I like your place and would like to bring my car here. Will you pay as much as the other places do?'

"I ask how much that is, and they all strike for 10 per cent on all repairs and supplies. Some ask to have the storage bill included and be paid 10 per cent on all bills, and some do not. Then to find out just what they expect I have led them along by letting them believe for a while that I am willing to pay a commission, and this is what comes next. The chauffeur asks:

" 'Do you keep a strict account of the movements of the car?'

"At first I did not understand the question, and said so. Then the man said:

" 'I mean do you put it down every time a car goes out and when it comes in?'

"I told him that of course we did, and he said:

" 'Well, I wouldn't store in a place where a full record of the car's goings and comings is kept.'

"I asked him why he wouldn't and coaxed him into telling me, and this is what he said:

" 'Well, you see, I get $100 a month, and I can make $100 a month out of the car if no record of its movements are kept.'

"Taking out parties is what you mean, I exclaimed, a light now breaking on me.

" 'Exactly; hacking it.'

"HACKING IT."

"Hacking it, I have since learned, is the term by which the chauffeurs call the practice of hiring out their employer's car for long or short trips, the same as a public hack. Of course this is done at night, or at such other times as the chauffeur knows his employer is away, or will not call for his car. Since I first learned this I have been frequently asked the significant question of whether I keep a strict tally on the going and coming of storage cars. I understand it now. The men give me to understand that in some places only the record of the trips made by the car when the owner is using it is kept, and that the chauffeur can use it on the quiet as much as he likes without being reported.

"This is one phase of the chauffeur question that certainly calls for attention. It is a flagrant abuse and one that should be stopped if nothing else is. And it could be stopped, all of it."

The Motor World man said: "The Automobile Club has decided to appoint a committee—Ibelieve one has been appointed—to arrest these abuses. What can the club do to stop them?"

The answer was: "Why, it could issue a license to every garage and have it understood that the club members would patronize only licensed garages. The various places licensed would be under a pledge not to pay any commissions and if any of them was caught doing so, its license would be forfeited and it would become an unlicensed place, which, to all effects, would be boycotted by the club members."

"Would such a system of patronage and boycott not be conspiracy in the legal sense against the places that might choose to run their business to suit themselves without license or interference by the club?"

"I don't know."

A chauffeur, one of the best, a man who has served several years as mechanic in a large automobile establishment, who is recognized as an expert driver and who is now employed on the car of a man whose name is synonymous with millions, had this to say:

THE CHAUFFEUR'S STORY.

"I suppose all this fuss has been stirred up because one man went talking to a reporter recently—for the sake of hearing himself talk I suppose—about the demoralization of chauffeurs. Of all the people who should not talk the man who did talk is the one, for his concern, as is well known to all the trade, is the one generally credited with having introduced the system here through its imported chauffeurs. What made the boys mad was that the firm, which had been paying commissions to only some of the men in the place, had just come out voluntarily with the proposition to treat every one alike and pay five per cent commission all around. Then this man comes out with a sad story about the depraved demands of the chauffeurs and a denial that his firm pays commissions. It hurt worst, though, when he said that they had to pay premiums to get good men. This—well, all I can say is that for a long time it was a mystery to some of us why the foreigners got the pick of the jobs to be given out, but we understand now. The American chauffeur, though, has not yet come to the stage of paying a concern for recommending him for a job.

"This whole system was imported with the chauffeurs from Europe. The Americans were not 'wise' to the ins and outs of the game, but the foreigners were as wise as serpents and knew every trick and, of course, the Americans began to learn. I have associated with the foreigners in the place we have been speaking of, and incidentally the first and only commission I ever received was handed to me unsought by the very firm that has been stirring up this muss.

CLAIMS COMMISSIONS LEGITIMATE.

"You must not think, though, that every man who takes a commission is a crook. Commissions are a part of every business and there are legitimate commissions for a chauffeur to get. He need not do anything but what is for the best interests of his employers and yet get them. I was just talking with a chauffeur whose boss has ordered him to get a couple of hundred dollars' worth of fixings for his car. He has been to three places and got estimates. At every place he was told that if he brought the order there he would get a commission. He would place the order with the lowest bidder, anyhow, but as it happened the lowest bidder offered him the best commission. He will be just as particular to see that the goods are up to standard as if he got no commission, because he expects first of all to do right by his boss and keep his job.

"There are men who abuse the commission practice, just as there are men in every line who abuse their privileges. I have yet to know of a man, though, who would buy anything unnecessary in the way of supplies or repairs or who would get anything but the best bargain he could for his employer. Any man who would do so ought to be booted out of the business.

"Suppose Mr. Brown's chauffeur says to a supply man that he doesn't want any commission, does it make any difference in the price that Mr. Brown has to pay? Not a bit of it. The dealer has to pay Mr. Smith's and Mr. Jones's chauffeurs commission, and if he cut the price to Brown he would soon be in trouble with Smith and Jones for selling to Brown for less. The commission comes out of the profit of the dealer. When the chauffeur doesn't get it the dealer is that much ahead. You get an order for a man for anything from bird seed to a battleship and there is a commission in it for you.

QUESTIONS OF WAGES AND SCHOOLS.

"Hacking it? Yes, that is done, but the men who do it are not the best men who get good salaries. That is something that is rank wrong and should be stopped. I don't take much stock in a chauffeur's union, but it might be of use in stoppping abuses of that sort. It could not regulate wages. They are too variable. One man is worth much more than another for the same kind of a car, and different men want different sort of services from a chauffeur.

"Good men? I don't know at this moment where there is one who is out of a job that I could really recommend as being a good driver and a good mechanic. It is to the interest of the manufacturers to have good men in charge of their cars, and they ought to start some kind of a school and break in green men. Many a car has got a black eye just because it has not been properly handled.

"The manufacturers could take a school of say six or nine men and divide them into classes of three. They could put three men each to work in the shops on cars of different types, say one class at work in the Winton place, another in the Locomobile shop and another in some place where foreign cars are handled. The men could work three or four weeks in a place and be shifted from one shop to another until they had learned enough to take hold of any type of gasolene car. They would not be experts,

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but they would be better than a lot of men who are now calling themselves chauffeurs. These scholars could work without pay in the shops and learn how to manage a car on the road from going out in the demonstration cars.

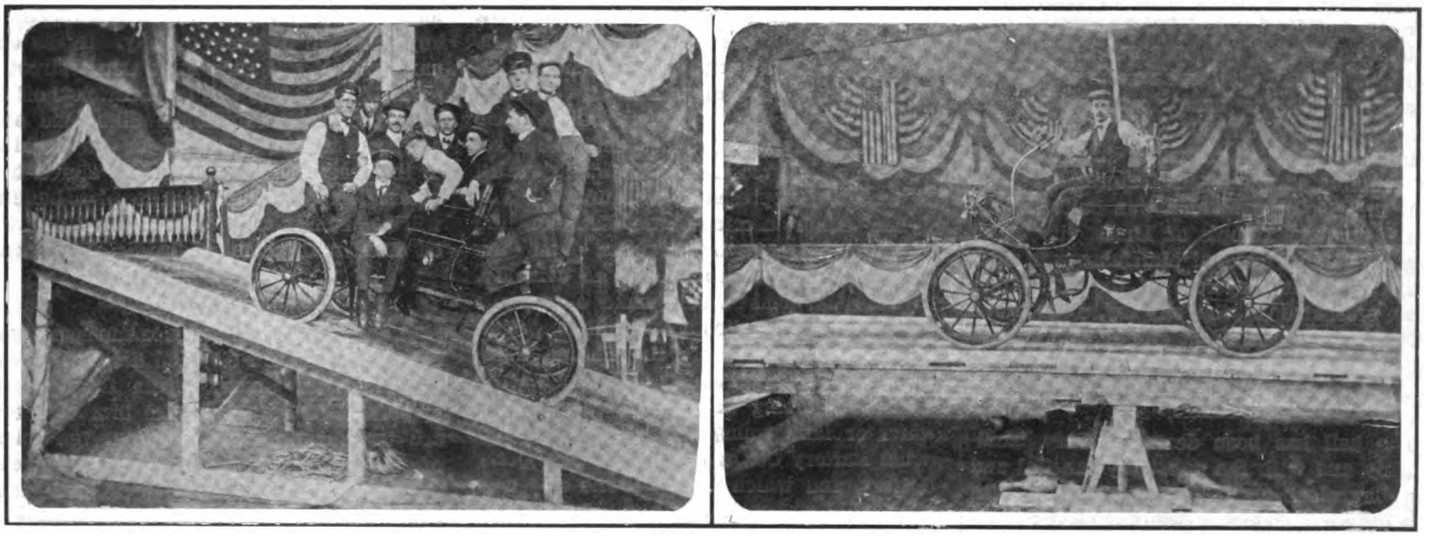
"Chauffeurs are not demoralized and they are not robbers, but more good ones are needed."

A manager who believes in recognizing the system of commissions for the present, said:

"This matter should not be stirred up. Leave it alone and it wil ladjust itself. The natural laws that govern the conduct of men and the laws of competition will settle it as it should be, and nothing else can. If the nature of the business is such that it feeds the system and encourages it, it will last and no arbitrary ruling of any club or board of trade can kill it. It may be an abuse, but if it is one that is encouraged by the competitive conditions of commerce it will continue. Many bad practices are kept alive in business by competition, and you can't help it. If, on the other hand, it is an evil that is artificial, a condition that is false and unnatural, it will soon be shaken off. Business men won't be imposed upon long. Let them run their own affairs to suit themselves and this thing will work itself out to a natural adjustment. You can make a lot of fuss, but you can't stop it if it is to be, and you can't perpetuate it if the conditions don't nourish it. Let it alone."

A member of the Automobile Club, who represents a large manufacturer, said:

"There is no doubt about the existence of this evil of commission paying and it is a very great one. I know a man who is as well satisfied as a man can be by circumstantial evidence that his car was deliberately smashed by his chauffeur in order that he might get the commission on the repair job and have a little vacation while the car was in the shops.. At the show I had a man come to me who is the chauffeur of a wealthy New Yorker, and he told me that his employer was going to buy one of two cars, ours or another make. He said he could throw the sale to either one he chose, that the other firm was going to give him $500 if he picked their car and he wanted to know what I would give him. I told him nothing and his employer, sure enough, bought the other car. The getting of good chauffeurs is another problem and, indeed, the whole chauffeur question is troublesome. Some poor operators are getting more than good ones. Some men pay twice as much as others; some engage men agreeing to pay a salary and board and others do not. There is a lot of regulating to be done. It is terribly mixed up now. I hope you can make some head or tail of it; I can't."



The ever-alert Ben Smith, manager of H. B. Shattuck & Son's Boston Emporium, lost no opportunity at the "Automobile Carnival" in that city last week. He had his cars always in evidence and opened many eyes by sending a Packard up a flight of stairs built at a 25 per cent. angle, starting from a standstill and then repeating the performance from the opposite side which was a 35 per cent. grade. He also had one of his little Oldsmobiles carrying 10 people weighing 1250 pounds, climb a 25 per cent. grade, as shown by the accompanying picture. He also won a blue ribbon for the Olds by showing its splendid control on the see-saw or teeter-board.

Status of the Storage Battery.

When asked what effect the expiration of the Brush storage battery patents would have on their business, the Electric Storage Battery Co. gave out this typewritten statement:

"While the Brush patent served to build up the storage battery industry, its value in maintaining a monopoly is long since past, and the Electric Storage Battery Co. is the owner of numerous patents of far more controlling importance upon its business than the Brush patent has ever been. In fact, with the exception of the pasted plate type used solely for automobile purposes, none of the different types now manufactured by the battery company has employed the Brush invention, and all are covered by patents which still have many years to run.

"While patents are always useful in protecting an industry, the Storage Battery Co. depends upon its reputation acquired during its twenty years' experience in the storage battery business to maintain its position in the business. Then the company has other patents of controlling importance covering the essential application of batteries, and the company is now actively engaged. through its patent counsel, in pressing to final hearing such fundamental patents mainly relating to the application to which storage batteries are put. The leading patents which it is now actively litigating are the booster patents, which are the inventions of two very prominent electrical engineers of this city, Mr. C. O. Mailloux and Mr. H. Ward Leonard.

"It can easily be understood that while paster plate batteries of more or less merit may now be manufactured, they cannot be applied to any useful purpose without infringing some of the existing patents owned by the Storage Battery Co.

"The only application which is affected by the expiration of the Brush patent is what is known as the pasted plate, which has a limited use and which is also difficult to manufacture, and if the inexperienced attempt to enter the field of manufacture the way will be strewn with their wrecks."

New Garage in Providence.

Plans are now being drawn up for an automobile storage station to be erected at the corner of Mathewson and Martha streets, Providence, R. I. The structure will be a two story one, with a frontage of forty feet in Mathewson street, and will extend 100 feet back, with entrances in both streets. The office and storeroom will be in front, leaving ample room for the storage of a large number of vehicles in the rear portion of the building, which is expected to be completed by June 1. It will be in charge of Nelson S. Davis.

W. A. Richwine, of the Autocar Co., has just returned from Denver, Col. He reports that the prospect for business there is excellent.

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BUFFALO SHOW OPENS

Nearly all Prominent Cars in Evidence—Big First Night Attendance.

Buffalo, March 10.—This city is holding its first Automobile Show this week, and its success is marked. Buffalo, with its 350 miles of asphalt pavement and with the good, smooth level roads of the country surrounding is an ideal place for the use of the automobile and its popularity in this city is increasing at a rapid pace. The city is also destined to become an important centre of the motor vehicle industry; indeed, already has quite a large number of manufacturers of machines which rank high among the automobile products of the United States.

The Show is being held in Convention Hall, a building owned by the city of Buffalo, and rented for purposes of this nature. The main hall, where the display of motor vehicles is made, contains a clear floor space of about 200 feet by 125, and is admirably adapted for such an exhibition. It contains as one of its features the magnificent pipe organ which was built for the Pan-American Temple of Music, the building in which President McKinley was shot. This organ at the close of the Exposition was presented to the city by a generous citizen, Alderman J. N. Adam, and placed in Convention Hall. It will be heard upon several occasions during the Automobile Show.

The hall has been decorated very handsomely and with the unusually fanciful and dazzling electric effects in connection with the different booths presents a most attractive appearance. The stage is set with Pan-American scenery showing the Electric Tower and other buildings of the City of Light, and appropriately connects the automobile exhibition with that now historic exposition. As for the show as an exhibition of automobiles it is a credit to the city of Buffalo and is said by those who have recently come from the shows at Cleveland, Philadelphia and Detroit to eclipse them in general effectiveness.

The largest space is taken by the exhibit of the W. C. Jaynes Automobile Co., of Buffalo, which shows the famous Winton touring car and the equally conspicuous, if lower priced, Oldsmobile; also the "Franklin" and several National electric vehicles.

The E. R. Thomas Motor Co. show several of their touring cars, and, of course, its well known Auto-bi motor bicycle, and as the product of one of the early workers in the vineyard, the Thomas cars and cycles are receiving the meed of attention that is their due.

A leading feature of the show is the exhibit of Packard machines by the Roe Automobile Co., of Buffalo, which includes the splendid 12 horsepower motor car, model F, 1903, which has been so much admired at other shows of the year, and the specially built Limonsine at $10,000. The Roe Co. also shows the well known Autocar and Waverley.

The Columbia Motor Vehicle Agency of Buffalo shows several handsome types of the electric automobile, the products of the Electric Vehicle Co. The Columbia agency has recently been established by a pioneer in automobilism in Buffalo, Dr. Truman J. Martin, with W. S. Bull, well known in both bicycle and automobile circles, as manager. It represents the Jones-Corbin Co. and the Ward-Leonard Electric Co., as well as the Electric Vehicle Co. The electric vehicle which Dr. Martin brought to Buffalo to astonish the natives away back in January, 1897, is still in use, and giving good service. It is known around Buffalo as "The Pioneer."

The Conrad Motor Carriage Co. and the Centaur Vehicle Co., both Buffalo concerns, have some excellent specimens of their work on exhibition. The Conrad touring cars, runabouts and delivery wagons being splendid types of up to date vehicles at twentieth century prices. The Centaur Motor Vehicle Co., besides its own product, shows the Toledo, Searchmont, Yale and Cadillac cars, all of which it represents in Buffalo. The stylish Baker Electrics, the Rambler, the Haynes-Apperson, the General and the Prescott are also prominently in evidence.

Numerous firms which make automobile accessories or supplies have exhibits, prominent among them being the Buffalo Gasolene Motor Co., which exhibits an electric launch containing motor adapted to either water or land transportation, and the National Battery Co., which makes the Sperry Battery, and which in fact is the only concern at present making electric batteries in Buffalo.

The following is a summary of the exhibits:

W. C. Jaynes Automobile Co.—Wintons and Oldsmobiles; Centaur Motor Vehicle Co., Cadillac, Toledos, Yales, Americans, Searchmonts and Centaurs; Roe Automobile Co., Bakers, Autocars, Packards and Northerns; J. J. Gibson, Haynes-Appersons; Columbia Motor Vehicle Agency, Columbias, Jones-Corbins and Knickerbockers; Don Robinson, Waverleys; Gibson Howard, Knoxes; A. J. Wells, Generals; D. H. Lewis, Ramblers; E. R. Thomas Motor Co., Buffalos; Prescott Steam Carriage Co., Prescotts; Foster Automobile Mfg. Co., Conrads; H. H. Franklin Mfg. Co., Franklins; Buffalo Electric Carriage Co.; Geneva Automobile Co., Genevas; Morlock Motor Works, gasolene runabout; Pierce Motor Car Co., Pierce Electrics; Buffalo Gasolene Motor Co., Buffalo motors; National Carbon Co., dry batteries; Fisk Rubber Co., Fisk tires; Diamond Rubber Co., Diamond tires; Twentieth Century Lamp Co., Twentieth Century Lamps; Standard Anti-Friction Equipment Co., anti-friction bearings; Hussey Automobile and Sundry Co., specialties; Truescott Boat Co., launches; Buffalo Tire and Rubber Co., tires; Schaeffer, Bunce & Co., running gears.

About four thousand were in attendance to-night and there is a prospect of increasing crowds during the week. The press of Buffalo has supported the enterprise well and the exhibition has aroused great interest, which wil doubtless aid in furthering the city's remarkable industrial boom and especially its boom as a centre of the automobile industry.

Geisel Enlarging his Station.

Extensive alterations are to be made to the automobile station of A. A. Geisel, Springfield, Mass. The plans call for an extension on the rear of the present garage of ten feet, and then another addition, 40 by 100 feet, runing to East Court street. When the new part is completed there will have been added 4,000 square feet of floor surface. The addition will be modern in every respect. There will be rooms for men and women, and a shop in which repairs of any kind can be made quickly. In the new part, which will face East Court street, a room 15 by 30 feet will be partitioned off for the Springfield Automobile Club, and storage room will be furnished for the machines of the members. These will be stored free, unless left over night. The new building will be of brick with cement floors, and will be fitted with chemical fire extinguishers.

In Use in Guadaloupe.

"A daily automobile service has been established between this city and the town of Ste. Rose," writes Consul Ayme from Guadeloupe. "This service is the first step toward the substitution throughout the colony of automobiles for the archaic stage coaches which were the only means of land transport. The Ste. Rose line began running on January 1, and has proved a success. On March 1 two new lines will be established, one from this city to Basse Terre and the other from this city to Le Moule. The automobiles used are of French manufacture, with gasolene engines as motive power. They are well made, handsome vehicles, and carry ten passengers besides the chauffeur and his assistant. The prices charges are about the same as for the old stage coaches."

Trolley Strike Makes a Sale.

One of the few gainers by the seemingly interminable Waterbury, Conn., street railway strike is S. A. Miner, the Hartford dealer. He sold a large steam bus last week to a committee of the strikers, and it was at once shipped to Waterbury. The committee is said to be looking for one or two more similar vehicles.

New Garage in Worcester.

The new garage of the Worcester Automobile Co., 84 to 88 Exchange street, Worcester, Mass., is nearing completion. A compound hydraulic lift has been put in, powerful enough to take the heaviest cars to the storage room on the second floor.

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The Metropolitan Salesrooms and Garages—I.

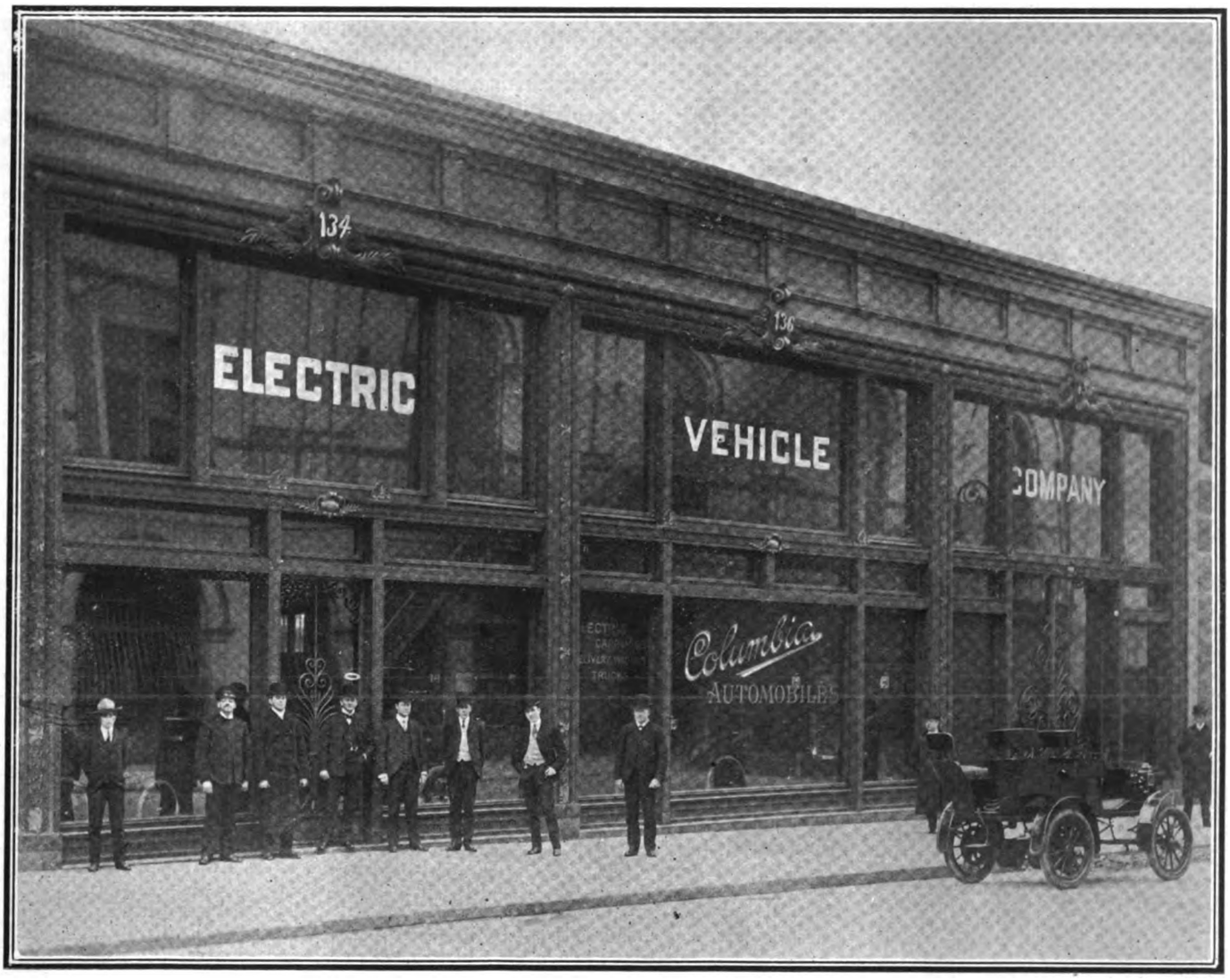
Had it been specially built for them, the New York salesroom of the Electric Vehicle Co., at 134-138 West Thirty-ninth street, could scarcely have been better designed for the purpose. Centrally located, roomy, light, convenient, it is a show room par excellence, admirably adapted for the advantageous display of the Hartford concern's extensive line of self propelled vehicles.

The illustration gives a good idea of the exterior appearance of the building, which is one story in height. It is located directly opposite the south side of the Metropolitan Opera House, but a stone's throw west of Broadway, and presents an imposing appearance, with its seventy-five feet front of glass, reaching from the street to roof. Handsome signs on windows and doors, including the well known script, "Columbia," set off this portion of the building and make a favorable first impression.

This is greatly heightened upon entering. The building, 100 feet deep by 75 feet front, is in one room, broken only by a few columns, and this gives an appearance of vastness that is increased by the lofty roof and the dazzling brightness, the latter brought about by the front of glass and huge skylights in the roof at the rear. The oiled floor, free from all incumbrances, is occupied by a representative showing of the company's latest vehicles, so arranged that there is ample space to view them from all sides.

The station is, as Manager Armstrong explained to The Motor World representative, a salesroom and showroom, pure and simple, and its arrangement is in conformity with that idea. Absolutely no demonstrating vehicles are kept there. No charging is done; no repairs or adjustments made. Complete vehicles only, and these ready for sale, are displayed. To the left of the entrance and toward the rear is the office, with three or four salesmen's desks just outside of it. On the western side of the building a hydraulic lift for handling underslung batteries on trucks and other vehicles is shown.

Artificial light is provided by twelve electric arc lights, hung from the ceiling, insuring a plentiful supply at all times.



ELECTRIC VEHICLE CO., 134-138 WEST 39th STREET.

The new uptown station in New York of the American Darracq Automobile Co., at 147 West Thirty-eighth street, was opened last Monday in good style. There are two floors to the place, with a capacity for a dozen or more machines on the ground floor. F. A. La Roche is in charge.

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JUSTICE IN NEW JERSEY

While Strict, Amended Scovel Bill is Fairly Reasonable—Passage Seems Assured.

Wise counsels have prevailed, and New Jersey autoists and legislators have reached an agreement on the Scovel automobile bill. The latter has been materially amended, and in this form, with practically unanimous support, it has passed the House of Assembly and gone to the Senate. There it is expected to evade opposition also and go to the Governor for approval, which is also looked for.

The bill is much improved. The most pronounced change from the original proposition regulates the speed at which the machines may be driven, it being provided that they may be driven one mile in six minutes, or ten miles an hour, along the sharp curves of and at the intersection of prominent crossroads in the open country; one mile in seven minutes, or eight and one-half miles an hour, in the cities and built up portions of towns, and one mile in three minutes, or twenty miles an hour, in the open country.

It is stipulated that when any governing body shall by ordinance or resolution permit a greater speed, such increased speed limitation shall be lawful in the city, borough or town so providing.

Drivers of autos must make declaration, duly verified, that they are competent to drive the vehicle, together with a brief description of it, including the name of the manufacturer and rated horsepower. Upon giving this information and on the payment of $1 for each machine registered, a license shall be issued.

Numbers on the vehicles shall be three inches in height and the strokes of a width not less than three-eighths of an inch, and shall be Arabic numerals. At night the numerals shall be placed on the lamps, which must be visible at least 200 feet in the direction toward which the auto is going.

At a signal from a person riding or driving a horse or horses in an opposite direction, drivers of automobiles must cause the latter to stop and remain stationary to allow such horse or horses to pass.

For displaying a fictitious license number a fine of $100 is provided, in default of which the offender may be jailed for thirty days. For racing a fine of $50 or twenty days' imprisonment is provided. For failing to display a number the fine is to be $25; for failure to carry lights a fine of $10. For violating the speed regulations the fines vary from $10 to $50. For a second offence the fine is to be doubled.

Hearst's Hand in Lawmaking.

Since William R. Hearst became the possessor of a "Red Devil" his enthusiasm for the motor vehicle has grown visibly. To further its interests in true jellow journal style he has arranged to have introduced at Albany by two Italian legislators—Messrs. Riordan and Bourke—a bill providing for the licensing of all automobilists. This bill provides for the licensing of all who undertake to drive an automobile, whether the machine is a public or private one.

The driver must at all times carry his license with him, and these will be issued only after strict examination as to ability to safely handle a machine.

The machine itself must, according to the provisions of this measure, be fully identified by means of prominently displayed letters and numbers, the former designating the class of vehicle, the latter corresponding to a full record of the name of the owner, place of storage and other particulars.

It is announced by the Journal that the bill will be introduced this week. As a sort of prelude or curtain raiser, and also at the instance of the Journal, Alderman Doull introduced a bill in the Board of Aldermen on Tuesday designated to apply to all public automobiles. It compels drivers of all public automobiles to display prominently at the back of their vehicles their license number.

Morrison and his New Duties.

The Peerless Motor Car Co.'s Boston branch, at No. 178 Columbus avenue, is now thoroughly established, and the new manager, A. E. Morrison, who relinquished the sales management at the factory in Cleveland, to assume charge of the Boston es-



tablishment, has the reins well in hand. That Mr. Morrison knows the Peerless and is equipped to advance its interests his factory connection makes manifest, and he is no stranger to the New England field, having been for some time with the Waltham Mfg. Co., where he obtained his first knowledge of gasolene engines. Later he was with the International Motor Car Co., and there added to his fund of information. Previously he was for eight years engaged in selling bicycles in California. That his ripe experience will bear fruit in his new position and that his efforts will make the Peerless car a big factor in New England it is safe to predict.

MAINE LAW MUDDLED

So Altered as to be Unrecognizable—Bar Harbor Obstructionists' Drastic Demands.

Originally favored by autoists—at whose instance it was presented—the automobile bill before the Maine legislature bids fair to be amended out of all semblance of its former self.

At the hearing before the Judiciary Committee it was urged that there would be great danger in permitting the use of autos on certain roads, such as those which run along the cliffs at Bar Harbor. It was then proposed that a provision be inserted in the bill giving the selectmen of towns the right to apply to a justice of the Supreme Court to close designated streets and roads to the steam, gasolene and electric carriages. Then objection was raised to this on the ground that it removed the roads from the care of municipal officers and county commissioners. It also appeared that the Bar Harbor folks wanted so many roads closed that some of the auto owners began to fear that they might be shut out of that resort altogether.

The bill is in the hands of a sub-committee which has been trying to reach an agreement which would be satisfactory to all parties. The committee has changed the speed regulations to meet the objections raised at the hearing, and stands ready to do what it can to make the bill acceptable to all parties interested, but it has not yet reported.

To prevent as far as possible the frightening of horses the automobile people incorporated in their measure a section which obliged the man in the auto to stop on signal from the man driving the horse, and that this might not be held to afford ground for an evasion of damages a section was put in the bill making it perfectly clear that the persons injured by the carelessness or ignorance of the operator of the automobile was in no way hindered in the recovery of damages. These things the auto people look upon as fair and reasonable, but they say that they do not want a bill which will shut them out of such resorts as Bar Harbor.

Cincinnati's Ordinance.

Backed by the Cincinnati Automobile Club, an ordinance regulating the use of automobiles has been introduced in the Cincinnati, Ohio, Board of Legislation. It was framed by Col. Max Fleischmann, of the club, and seems likely to pass. It provides a speed limit of seven miles per hour in the territory bounded by Court, Water, John and Broadway, and in other parts of the city and in parks, fifteen miles per hour. No person under sixteen years of age will be allowed to manage an automobile, and any driver or chauffeur will be compelled to stop on signal from a person driving a vehicle propelled by horse power. Owners are compelled to register their vehicles with the city auditor and pay a license of $3 per year.

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"DEVIL," HOWLS WARREN

His Chief Argument for his Much Riddled Bill—Will he Flee to the Woods?

Although apparently very wide apart, Connecticut autoists and autophobes may be brought together ere long. Each side seems to be seeking the same end—the regulation, not the hampering, of automobile traffic. Indiscriminate racing and "scorching" are emphatically condemned. The present wise law, properly enforced, will, it is asserted, serve every purpose, and any change in in would result in harm.

All this was brought out at the hearing before the legislative committee on public health and safety, at Hartford last week. The three bills introduced by Representative Warren, of Lyme, were considered, as follows: H. B., No. 59, that power vehicles shall not be run over any country road except main thoroughfares of a town; H. B., No. 175, that every power vehicle shall be marked with the name and address of the owner; H. B., No. 173, that no power vehicles shall be run over country roads faster than eight miles an hour.

The discussion was led off by Representative Warren. "The automobile painted red, mounted on wheels, is a devil," he declared. The speed of eight miles an hour was the limit such power vehicles ought to attain. There is nothing ridiculous about the eight mile limit." There was a difference between eight miles and fifty miles an hour, and there were some machines of the 'Four Hundred' of New York that passed through his town at a rate exceeding forty miles an hour. Mr. Warren claimed that the horse is a necesity and that the automobile is a luxury. The bill simply put the automobile on the same level as the horse vehicle. He protested against the grinning automobiles doing him up; at least he wanted to file his protest before the automobile struck him. "If the State doesn't pass a bill we will take action ourselves that will be effective. This matter is getting serious," he said in conclusion.

C. B. Mason, of Bristol, said that he was opposed to the bills. It didn't make any difference how fast the machines were run; if horses were afraid they were afraid of the machines themselves. If a man wanted to run his machine at 30 miles an hour he would in spite of any 8-mile an hour law, but very few men wanted to drive that fast. It was impractical on the country roads and it wore out a machine much faster than the ordinary man cared to. He said that the 15-mile law was a fair one. There was hardly a man in the country who didn't own a good horse which he habitually speeded up to a 3-minute clip in the streets. It was untrue that autos were used for pleasure by only a few. They were becoming used more and more for business. The present law restricting speed to 15 miles an hour was a good one. It was easier to stop an automobile than it was a rapid-moving horse. The street accidents reported in the newspapers for the past few weeks had all been from horses and not from automobiles. Mr. Mason had taken a week's pleasure trip in his machine without a sign of an accident, nor a frightened horse. He was in favor of registration and identification of automobiles. Mr. Mason offered to take Mr. Warren on his automobile, and thought that that gentleman would soon want to own an automobile.

Frank T. Brown, of Norwich, appeared against the rate of speed bill and discussed all three bills before the committee. He had no doubt of apprehension in country towns as to the dangers of automobiles. He thought, however, that much of this was due to opposition to innovations of any kind. The legislature was asked to pass a law which was based on the misdemeanor of a very few. It had been said that the horse was lord of the highway. This was not so. The highway was for the purposes of travel. The time would soon come when horses would not be frightened at automobiles. They had become used to bicycles, electric cars and steam cars, and would soon not be frightened at horseless vehicles. It is from an old and good authority that "a horse is a vain thing for safety." The bill recognized the use of automobiles, and the speed limit of eight miles would be an embarrassment to law-abiding owners and drivers of automobiles. The bill would not accomplish the purpose desired. He could see no reason why an automobilist should not use any highway. It might, however, be hazardous for a machine to be run on some roads. It would be difficult for a court to define what a "thoroughfare" is. The common law was even a better protection against fast speed than the statute. Mr. Brown saw no objection to the registration of the automobiles.

Dr. E. B. Hooker, of Hartford, said the whole trouble had been from lawbreakers. Enforce the law, identify the lawbreakers, but do not punish the law abiding gentlemen and ladies who own and run automobiles. In behalf of the physicians Dr. Hooker said that the profession was using power vehicles more and more, and it would be a hardship to limit them to eight miles an hour when on an errand of mercy. It would be absurd.

Dr. E. J. McKnight had run an automobile for over a year and a half, and he thought, in fact he knew, that his machine was safer for himself and for the public than the safest horse in Connecticut.

M. J. Budlong, of the Electric Vehicle Company pointed out that several thousand workmen in Connecticut were employed in the manufacture of automobiles, and such drastic measures as are now before the Legislature would have a serious effect upon the industry and upon the sale of automobiles. He presented statistics to sho wthat automobiles could be stopped in less than half the distance a horse could be stopped.

Representative Warner, of Woodbridge, said that the farmers of the State desired that there should be some means of protection from the reckless automobile drivers. That was all.

Representative Armstrong, of Franklin, agreed to that proposition. The farmers did not want to exterminate the automobile, but to aid in controlling it, and in developing it.

Andrew F. Gates thought the gentlemen who had spoken for or against the bills were not far apart. The desire was to control the machines. The fact had been ignored that there was a law on the statute books to-day that would remedy all the evils complained of if it were enforced. All the incidents mentioned had been of violations of the law as it is. Some system of lettering or numbering machines might be added to the present law with advantage. Outsiders would then have to put Connecticut numbers on their machines.

A few days after the hearing Representative Warren rushed into print protesting against "ridicule from the press." He says that the "newspapers throughout the State have been opposed to the bill from the start. "As time passes on and the unpleasant things of life are thrust upon us," he concludes, "we must submit, and if we have got to flee to the woods to make room for the automobile, the sooner the better," whatever that may mean.

Ancient Tennessee Law Resurrected.

Some one has dug up an old Tennessee law restricting the use of steam vehicles on the public highways, and fears are entertained that it may be enforced against steam automobiles. The act provides that posters shall be put at all important intersections of other roads with the road to be used before any steam wagon or carriage shall be run upon any such road; and that vehicles propelled by steam may pass over any toll bridge or through any toll gate provided they pay double toll. The next section provides that it shall be unlawful to run any vehicle propelled by steam unless controlled by a competent engineer and then only upon any public highway, except between the hours of 9 o'clock p. m. and 4 o'clock a. m. The next section provides that every person operating a steam vehicle on a public highway shall keep a watchman at least 200 yards in front of such vehicle for the purpose of notifying any person traveling on the public highway of the approach of such vehicle; and it is made the duty of any person operating such vehicle to stop the same and stop the escape of steam and stop all unnecessary noise on the approach of any wagon, buggy or horseman until the same shall have passed. The statute further provides that every person failing to comply with or violating the provisions of this law shall be liable to all damages caused by such violation and shall also be punished for a misdemeanor.

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Light That Does Illuminate.

Too much light is a venial fault in a lamp and one that few autoists are likely to complain of. The Lens Mirror Searchlight of the Rushmore Dynamo Works, Jersey City, N. J., has been accused of being too bright, but its makers claim that in use it is all that could be desired.

The lamp is a copy in miniature of the standard Navy Electric Searchlight, except that an acetylene gas flame is made to do service in place of electricity. The generator will supply about twenty-five cubic feet of gas, sufficient to give seven hours' light. The arrangement of the carbide receptacle is unique, the carbide remaining in place on a grate in lumps, the waste falling into the ash pan below as a dry powder.

With this lamp objects fifteen hundred feet distant can be plainly perceived, while by using the controlling gear the light can be thrown in any desired direction.

Walton Makes Change.

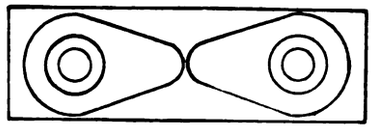
H. E. Walton, who has been connected with the Peerless Motor Car Co., Cleveland, Ohio, as purchasing agent, has associated himself with the Shelby Motor Car Co., of Shelby, Ohio.

John Maxwell, of Oneida, N. Y., has been appointed agent for the Haynes-Apperson cars. His territory covers twenty counties in New York State, west of Albany.

These Should Sell Like "Hot Cakes."

The discovery that no matter how foul the spark plug a spark and explosion can be secured by interrupting the circuit and providing an external gap to be jumped by the current has been quickly turned to advantage.

Abroad several "interrupters," or "intensifiers," as they are variously termed, have made their appearance on the market, and in



this country, A. H. Funke, No. 325 Broadway, New York, has been first to seize the opportunity. His device is simplicity itself, as the accompanying illustration makes plain. It consists of layers of mica into which are eyeleted two copper fingers, as shown. In one eyelet the end of the plug is secured, in the other the end of the high tension wire. The outside and visible spark jumps from the tip of one finger to the tip of the other.

As the Funke "intensifier" can be marketed at a merely nominal price, that it should meet with an instant and large demand appears certain. Considering its invaluable nature, it would not seem that there are many men owning a gasolene motor who would not have one or more devices constantly about his car or person.

Century's Expansion.

The Century Motor Vehicle Co., Syracuse, N. Y., have been successful in securing an additional building adjoining the one already occupied by them. A lease has accordingly been taken on the four story brick building at Nos. 510, 512 and 514 East Water street. The force of employes will at once be increased.

From $6,000 to $7,000 worth of new machinery is being received, and a 26 horsepower gasolene engine is being installed in the machine shop at a cost of $1,200. The first two floors of the newly leased building will be used for the offices and salesrooms, while the third and fourth floors will be used for the building and finishing of the body of the machines.

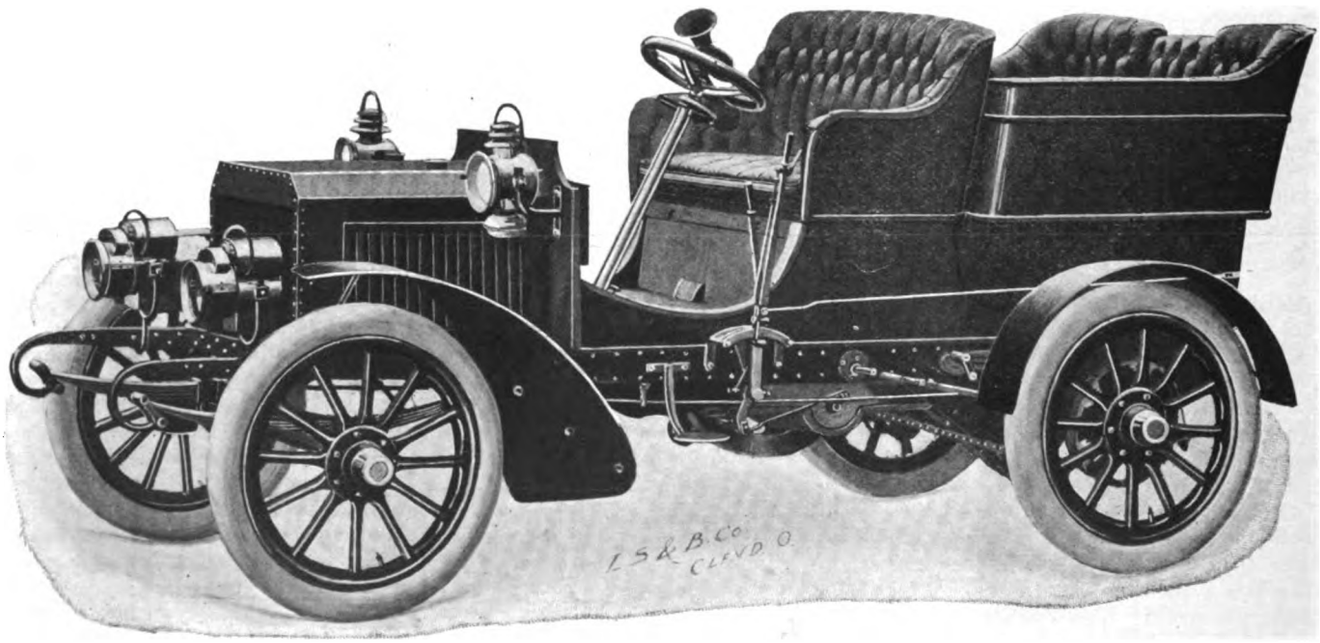
"We have orders ahead for 500 machines," Secretary Elliott is quoted as saying, "and we are planning for a plant to turn out 1,000 next year."

Miller's Foreign Chains.

Charles E. Miller, the Reade street importer and jobber, has received from England the first shipment of Brampton chains, for which he recently secured the American agency; this first shipment is of Panhard sizes. That Miller's deal was not designed merely to cover chain replacements on foreign cars, as some have claimed, he makes plain. He says he is ready and in position to quote interesting prices on the Brampton to any American automobile manufacturer.

THE STEARNS CAR

Received a lot of very favorable comments at the show.



The style and general design is right. The motor is powerful, with a perfect throttle, and runs silently and with no vibration. The attachments on the dash and controls at the wheel are good points, too. The small tube radiator is ahead of the time, and considering all things, **STEARNS CARS are worth more than they cost.**

Cadillac Auto. Co. of Ills.,
1312 Michigan Avenue, Chicago, Western District.

F. B. Stearns Co., Cleveland, O.

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CONCERNING COMPRESSION

Some of the Misconceptions That Exist Regarding it—Losses Through Exhaust.

"Although gas and gasolene motors are now in use to the number of many thousands, the average person seems to be better acquainted with the modus operandi of the steam engine than that of the explosion engine, and conditions of operation of the first are often erroneously applied to the second. Thus, for instance, the fact being well known that a high ratio of expansion in steam engines leads to economical results, gasolene car builders, imperfectly understanding the theory of that machine, often seek to devise means whereby similar effects can be produced in such engines. While it is true that carrying the expansion further than usual in explosive engines results in higher economy, the methods and means employed to this end must be entirely different from those used in steam engine practice. It is often suggested that if the stroke of an engine were doubled, without increasing the bore, the gases would be expanded to a much lower pressure before the exhaust took place, and consequently a much greater proportion of the heat value of the gases would be turned into useful work, whereas it is plain that such a proceeding would not result in increased expansion," says the Motor Car Journal.

"Similarly the effect of a higher or lower compression is not as well understood generally as it might be. It is known, of course, that the degree of compression employed affects the power of the motor, its fuel efficiency, the exhaust, the ignition, ease of starting, etc., but the nature of its relation to these various factors is not clear to many chauffeurs and experimenters. During the suction stroke the engine draws in a certain quantity of explosive mixture, depending upon the displacement of the piston per stroke, but independent of the compression space or the proportion of bore to stroke. After the mixture has been compressed it is ignited and burned, and the heat energy developed by this combustion is a fixed quantity, independent of the compression; the only thing which affects the quantity of heat developed is the proportion of the mixture, which is here assumed to be constant and the most favorable.

"Of the heat liberated by the combustion of the mixture, a portion is converted into mechanical work, and the rest is dissipated through the cooling water and the exhaust gases. The distribution of the heat is affected by almost every change in the proportions of the combustion chamber, and a decrease in the compression space, and consequent increase in compression, increases the proportion transformed into mechanical work, by decreasing the proportion going into the cooler water. A decrease of the compression space means, of course, a reduction of the cooling surface with which the burning charge is in contact, especially during the first part of the power stroke, and the direct cause of the diminished loss through this source is therefore apparent.

"The question as to what influence the compression has upon the exhaust pressure is also of some interest. One view is that a low compression has the two serious disadvantages of the violence of the exhaust and the excess of heat thrown away due to a less complete expansion than would be obtained if the compression space were smaller. Another opinion is that the exhaust pressure will be higher, if anything, in a high compression engine. This would mean, of course, that the loss through the exhaust gases is greater with high compression, and this we believe to be the case, although the increase may be slight. The gain in mechanical power is then entirely due to a reduction of the jacket losses.

"This conclusion is in line with the view entertained by M. Richard, a prominent gas engine authority, who states that any means by which the loss through one of these two great sources of waste (cooling water and exhaust) is reduced results usually in an increased loss through the other one. In two engines, otherwise the same, the quantity of gas per unit of cylinder volume (the density) at the end of the power stroke would be greater in the one with the smaller compression space; but density alone does not fix the pressure, which is also dependent upon temperature.

Novelties in Motors.

Among the departures from conventional designs seen at the British show was the Bardon gasolene car. The explosion takes place between a pair of pistons, which work separate cranks, one on each side of the car. The cylinders are duplicated, and consequently there are four pistons working in two cylinders, driving two double throw cranks, one on each side of the car. These are connected by means of double bevel gearing with the clutch or first motion shaft. This has the sliding gears of the change speed upon it, the fixed gears being upon the differential shaft, which is connected by outside chains to the road wheels.

The Brookes car also differs from the usual practice. The three cylinder vertical engine is set across the car, so that the crank shaft is parallel with the wheel axles. In other respects it differed little from the usual European design.

Wants More Artistic "Bowsprits."

"What can be more inartistic and show such poverty of invention as the cutting off of the horse from cars shaped like previously horse-drawn vehicles, broughams, victorias, etc.?" asks an autoist.

"In the rightful finish of the motor-head, or prow, there is endless room for improved artistic forms of the bows. The figureheads of oldtime ships, of gondolas, sledges, and even of elephant, howdahs, point the way."

REGISTERS ON A TAPE

Ingenuity of Prize-Winning Mors Timing Device—Renders Mistakes Impossible.

Further particulars regarding the Mors timing apparatus, which proved the victor in the Automobile Club of France's Dourdan contest make plain its chief feature. This is that the chronometer used is not started and stopped during the trials, but runs continuously. As it works, a paper strip is drawn through it, an electric contact perforates the paper, and marks the minutes, seconds and fifths of seconds. Whether the paper passes at the same speed or at varying speeds makes no difference to the result, for each perforation represents a fraction of a second registered by the watch. The passage of the car at the starting post and also at the finishing post is marked on the tape, and the number of perforations between the two marks gives the time which has been occupied by the car in covering the measured distance. The paper tape may be kept for reference, and no mistake can be made, for the perforated record establishes indisputably the time occupied by every car.

With the ordinary chronometer with a stop movement the stop, quick fly back and restart movement destroys in a large measure its accuracy; whilst the apparatus invented by Mors, or rather by M. Pottier, the electrical engineer, who is at the head of the electrical department of the Mors firm, utilizes the chronometer without the stop motion and thus obtains its full accuracy.

The second prize of the competition has been accorded to M. Stocker, of Vienna, who has also a very accurate apparatus; unfortunately it is three or four times the price of the first one, but it is understood that these two are to be officially authorized by the A. C. F.

The question, however, as to automatically registering the passage of a car over the starting and finishing point has not yet been settled, for the wire stretched across the track has been found a complete failure; a project of making an electrical contact by a wire touching the chassis as it passes is being studied.

Care Necessary in Using Emery.

Emery powder is just the thing to use for grinding valves, but it is sure death on piston rods or other working parts. In grinding an exhaust valve seat, therefore, it is advisable to place some cotton between the combustion-chamber proper and the cylinder, in order to prevent any emery powder gaining access to the latter, which might result in the scoring of its walls.

The First Ice Wagon.

"The Atlantic City Ice Co. will be the first to introduce automobile ice wagons here. Proprietor John Fessler is in New York to order several of them."—(Atlantic City Times.

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THE MATTER OF TIRES

Why Tests Have Been of Small Value and Why Better Tires are the Rule.

"The tire itself being no part of the propelling equipment of the automobile, there is certainly no reason why the record of the motive power should suffer for tire troubles. But since the tires are necessary to the operation of the vehicle, and the reliability of the tires an essential feature, it would seem reasonable for a report on a reliability run to cover every detail instead of only a report on reliability of the motive power. The object of the run obviously is to give the intending purchaser of an automobile—whether he be one of the interested public or an enthusiast in search of a better machine—an idea of the relative ability of machines to do various kinds of work. Certainly the tires are essential to the proper performance of this work. It is harder for the novice to judge of a set of tires than of the vehicle itself. He is forced to take the advice either of his dealer, which is liable to be prejudiced by considerations of price, or of some friend, whose experience must necessairly be limited, both as to makes of tires and the number of sets of each make that he has become familiar with.

"Where more than one braiad of tire was used by any one kind of vehicle these data would, of course, be most valuable. In cases where a difference in the kinds of vehicles somewhat varies the conditions, the classification of the vehicles by weight makes this difference a small factor. The care used by the individual operator of the vehicle in starting and picking his road, as well as his control of the speed, has more influence on the wear on the tires than a difference of several hundred pounds in the total weight of load. Tires, therefore, used on the same class of vehicles would be as nearly under same conditions as it is ever possible for tires to be. A separate tire testing contest might have much influence, but the one lately held in England was of little value because of the limited number of makes of tires entered. But the value of such a test, even when more representative, could never equal the value of a complete report on the tires of a reliability run," says a writer in the India Rubber World.

"There can be no doubt in the mind of any one who watched the endurance runs of the past, and who followed the progress of this year's run, that great improvement has been made in the matter of tires. This has been due in great measure to advances in the art orf tire making—in the compounding of rubber for tires, in improved (because stronger) tire fabrics, and in details of designs of tires. But another thing has contributed no less to this favorable result—namely, the automobile manufacturer is beginning to see the reasonable side of the tire manufacturers' point of view. For several years the rubber manufacturer has been told to finish the tires 'as ordered,' and in far too many instances the order was based solely upon price. The tire maker, knowing as he does that the average vehicle uses up several sets of tires, has an even deeper interest in th success of his product than the automobile manufacturer has, since a good showing in the matter of tire efficiency will secure for him the renewal of trade, while a failure will be sure to induce the user to change. With this idea in mind the various tire manufacturers have conducted extensive tests, the results of which, added to the information secured from customers, have given them a fund of information more comprehensive than that of the automobile manufacturer himself. This puts the tire man in a position to furnish the automobile manufacturer with the tire best suited for the requirements of the latter. The question of diameter of tires should always be left to the tire manufacturer, and in many cases the diameter of wheels would be altered if he were taken into consultation.

"Although anything like exact data bearing upon tires was entirely lacking in the late run, it is a fact that no other line of progress in the field of motor vehicle manufacture was so apparent to the veteran of former runs as the improvement in this, evidenced by the lack of tire troubles. Almost as conspicuous was the ease with which tire repairs were effected, and the lack of the old exhibitions of dread displayed by the operators of the contesting vehicles as they set about a job of repairing punctures. A certain degree of satisfaction must be felt by every manufacturer of automobile tires in the United States at so creditable a showing, and every effort should be made to induce the Automobile Club of America to include in its records in future a detailed report on the work done in all its runs by the different tires entered."



AT A BUSY CORNER IN NEW YORK.

THOSE PART-CASH SALES

Why They are Open to Suspicion and Appear Subterfuges to cut Prices.

"There is no instalment business being done yet, but some dealers are leading up to it," remarked a tradesman to the Motor World man last week.

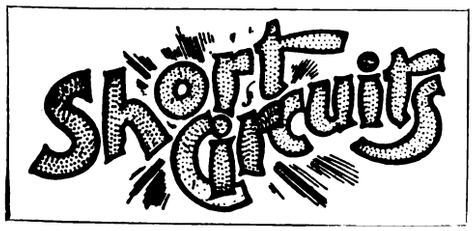
"I know of one man who closed a deal a short time ago in which some real estate was part of the consideration. Now, there is real estate and real estate, and there is a kind that any dealer could accept if he wanted to bother with turning it into cash. But this particular real estate would be very difficult to turn into money, or into anything else. It is supposed to be on the seashore somewhere in the wilds of Jersey, but I have a strong suspicion that it would be hard to find when the tide is in. The seller was not very communicative about it, and the dealer did not ask too many questions. Perhaps he was afraid of being told too much, as he got part cash and he may have been satisfied.

"But for my part I don't care to let good automobiles go for real estate. even when I can see it."

Death of an Early Worker.

There died at Marion, Ind., last week an early worker in the automobile field. Thirty years ago Leonard Anderson, who then resided at Painesville, Ohio., built a steam carriage and ran it around town, much to the disgust of the inhabitants, who raised a howl because the machine scared so many horses. Anderson abandoned his auto under public sentiment, but declared that the motor carriage would come into general use, and he would live to see it. His prophecy has been fulfilled. He died at the age of seventy-nine, and will be buried at Painesville.

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An English odometer is fitted with a bell that rings at stated distances.

The municipal authorities of Wanganni, New Zealand, have ordered a motor fire engine.

An 80 horsepower C., G. & V. car was ordered by C. M. Schwab, of the United States Steel Co., last week.

The King of Belgium added to his "stable" by purchasing a new C. G. & V. car at the Brussels exhibition last month.

Eight new members were elected by the Milwaukee Automobile Club last week, bringing the number up to 49.

It has been decided by the Automobile Club of Bridgeport, Conn., to hold a banquet at each annual meeting. The latter occurs on the first Monday in April.

In 1901 Paris contained 98,868 horses; in 1902, 91,976, and in 1903 there are supposed to be 90,926. The steady decline is attributed to the ever extending use of the automobile.

The following new active members have been elected to the Automobile Club of America: Robert W. Goelet, Spencer Trask, Jacob Ruppert, Raymond Owen and F. A. Thompson.

There is talk among San Francisco autoists of holding a non-stop run around the bay. The Automobile Club of California will probably be asked to take charge of it, the trade guaranteeing its support.

So ardent is his desire to become the possessor of an automobile that a Springfield, Mass., man offers to exchange his house for one. That beats graveyard lots and similar objects of barter that are not easily realized upon.

When testing the spark by holding the end of the high tension wire near some part of the engine or frame, never hold it more than one-quarter inch away. An attempt to get a longer spark may produce a short circuit in the coil.

At the Automobile Club of America last Tuesday night there was an illustrated lecture by Dr. Ulysses Kahn on "Camp Life, Customs and Scenery in Abyssinia." Dr. Kahn was surgeon for Count Leontiff's expedition to Abyssinia.

Autoists can scarcely be too strongly impressed with the desirability of making a free use of gasolene or kerosene for cutting away grease or gummed oil. It has an almost magical effect. A sticking valve, clogged piston rings and crank cases and crank bearings will, thus treated, work beautifully.

An informal preliminary meeting was held at the Galt House, Louisville, Ky., last week by autoists desirous of forming a club. Dr. J. W. Irwin acted as chairman. It was decided to meet again on March 13 to perfect an organization.

Mme. Lockert will have a woman companion in the Paris-Madrid race. In the list of entries appears the name of Mme. du Gast, a fair Parisian chauffeuse of considerable celebrity. She has drawn No. 29, and will, therefore, start in that position.

Registration is taking place more rapidly among Philadelphia autoists. Up to March 1 nearly one thousand had registered at the City Hall, a number of them being the owners of more than one vehicle. It is estimated that there are two thousand automobiles in that city.

The effect of the automobile in the future will be to prevent to a great extent the undue extension of cities as residences, while extending their commercial prosperity as centres for the working business of the country," declares Sir John McDonald, the Canadian statesman.

The French Court of Cassation has reversed the decision of the justice at Châlon-sur-Saône, who declared illegal the decree of the Mayor fixing at less than the rate of the general regulations the speed for automobiles in the towns and villages. Consequently the mayors within the thickly inhabited districts will have power to fix, by special decree, the speed of automobiles, and this, notwithstanading the provisions of the general regulations.

The Long Island Automobile Club is looking for new quarters, where it can have storage facilities for the accommodation of its members. According to one of the officers of the club, an option has been obtained on a building in the Bedford district of Brooklyn, where there will be room in the basement for the storage of twenty-five cars. As the matter has yet to go before the governors of the club, the house committee is keeping the exact location of the new place a secret.

At a special meeting of the Board of Governors of the Rhode Island Automobile Club, held last week, the subject of the State's neglected highways was taken up. It was decided to urge the present Legislature to appropriate the sum of $100,000 for the purpose of carrying out the recommendations of the State Board of Public Roads, whose recent report showed the general condition of the main highways throughout the State.

Notices have been sent out to the club members asking their co-operation and help to secure the passage of the resolution in the General Assembly at this session.

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Contempt of Gasolene.

That familiarity breeds contempt is shown by the way dealers and other tradesmen handle gasolene. In spite of its evil name it has no terror for them. They know that it is dangerous only when mixed with a certain quantity of air.

"Pshaw, these regulations and restrictions make me tired!" exclaimed a Brooklyn dealer to whom the subject was broached. "Instead of affording protection from fire, as is their avowed object, they ruin the business of legitimate tradesmen and do no real good.

"Now take my case. There is a dwelling house over my store, consequently I am permitted to keep gasolene on the premises only in microscopic quantities. But the people who live in the house and thousands of others similarly situated have practically a free hand in the matter. They know nothing about the handling of gasolene, yet use it in quantities for cleaning clothes, etc., and the wonder is that there are not more fires originating from it. Now, I use plenty of gasolene, but can't keep it on my premises, although it is perfectly safe in my hands. I could touch a match to it and hold it there, knowing full well that nothing would happen. But I must send out a dozen times a day for it if I obey the law; and if I don't the authorities may come down on me at any moment and fine or even imprison me."

When Misery Does not Love Company.

There is still sufficient novelty about the automobile to cause people to stop and watch a vehicle that is in trouble..

A little runabout turned from Nassau street and headed for Broadway one day last week, when it came to a stop in front of the Times Building. Instantly two or three hurrying pedestrians stopped. In about thirty seconds their number had been increased to nearly a score, all intent on watching the runabout and seeing what the chauffeur would do to locate the trouble. Without leaving his seat he leaned over and gave the crank a turn, but the flywheel after going about half a dozen turns came to a stop. Interest deepened on the faces of the spectators, and their numbers increased. Another turn of the crank resulted as before. A third attempt, made after some manipulation—presumably of the mixing device—was more successful, for the engine started up all right and the vehicle rolled across Broadway and disappeared in the distance. The crowd seemed disappointed and rapidly dispersed.

The Chicken Killing Trick.

The story is far from new, but the naiveté of its latest telling makes it worth repeating.

An Irish autoist ran over a chicken. The bird was not hurt, but he gave the old woman who owned it a sixpence, and in return she told him a secret. "When I wants a pullet killed, I sends them into the road, and as like as not it's killed and paid for, and I has my pullet into the bargain."

Opening the Farmer's Brain.

"The city folk ride their swift and shining automobiles into the country; and we are getting so used to the innovation that the most countrified of us almost forget to stare. We are becoming reconciled. Yet this seems to be only the beginning of the fight against the horse in his own country—the real country, the country of farms, of plows and harrows, of drills and harvesters, of top buggies and hay wagons, and of the ever present horse to make them 'go!' The automobile is going into the country to stay—so we are told," says Scientific Farms.

"The best organized Grange county in Michigan is Lenawee, with its thirty-six granges that average a little better than a hundred members each. It is in Lenawee County that the automobile is trying to drive the horse out of the business of carrying the rural mails. The effort has been systematically made, and the tests of efficiency of the horseless vehicle have extended over a period of a full month. Mud, frost, and deep snow have had to be contended against; and yet the automobile is said to have been able to do the work twice as fast as the horse.

"It is said that the Lenawee County farmers were prejudiced against the new method of carrying the mail to their doors. They are friends of the horse. But friendship and prejudice are not expected to avail. A writer in a St. Louis paper says that the postmaster who has had the experiment in charge thinks "that the people along the routes, whose attitude toward the automobile heretofore had not been friendly, came to regard the machine with admiration, and he believes that all that is necessary to allay the sentiment of unfriendliness toward automobiles now existing among our rural citizens is to demonstrate to them the machines' immense advantage over their four-footed contemporaries.

"Doubtless the horse is to remain with us as a prime necessity at least during the present generation of farmers, but the rapidly increasing population of the country promises to make the change from the horse to the automobile a real promoter of civilization. The farmer will have to make the best of the situation."

"Private Bottle" System Abolished.

One of the most novel and distinguishing features of the Automobile Club of America is to be abolished. This is the private locker system maintained for members in the grill room. The club governors have decided to take out a club license and have a buffet bar.

The locker system is one that has attracted much attention. No liquors are sold at the club, but almost every member has a little cabinet stored with bottles of various sorts. It has been no uncommon thing in the past to see two members enter the grill room and each take from his locker a bottle and then sit down together for a "Dutch treat."

Protected Against Damage Suits.

A number of Providence, R. I., automobilists are carrying liability insurance protecting them in case of suits arising from accidents. The rates are said to be frightfully high, but a well known autoist stated the case in this way:

"People will bring a suit against you for the most trivial cause, and are even looking for a chance to get an action against you. The average jury are prejudiced and do not look upon the automobile with any feeling of kindness, and while the defendant in a case may be in the right, public opinion is certainly against the auto. Speeding the machines around the busy streets by a few reckless owners is no doubt the cause, and as the autos become more general, accidents more numerous, a man to be on the safe side must pay out a large sum of money each year to ease his mind and feel protected."

No Race on Long Island.

The governors of the Long Island Automobile Club have practically given up the idea of having a 100-mile road race on Long Island. It has been advised by its attorney that the county supervisors or other officials have no power to grant permission for a race. The Cocks law fixing the speed limit, according to the lawyer, is a State statute that cannot be contravened by any local authorities, and its operation could not be suspended for a minute except by the State Legislature. It is unlikely that the club will appeal to the Legislature, but it is more than likely that an effort will be made to have a race under its auspices sanctioned in Connecticut, where the State law especially provides for the speed limit being suspended by local officials for the purpose of holding a race

Tour and Racemeet Planned.

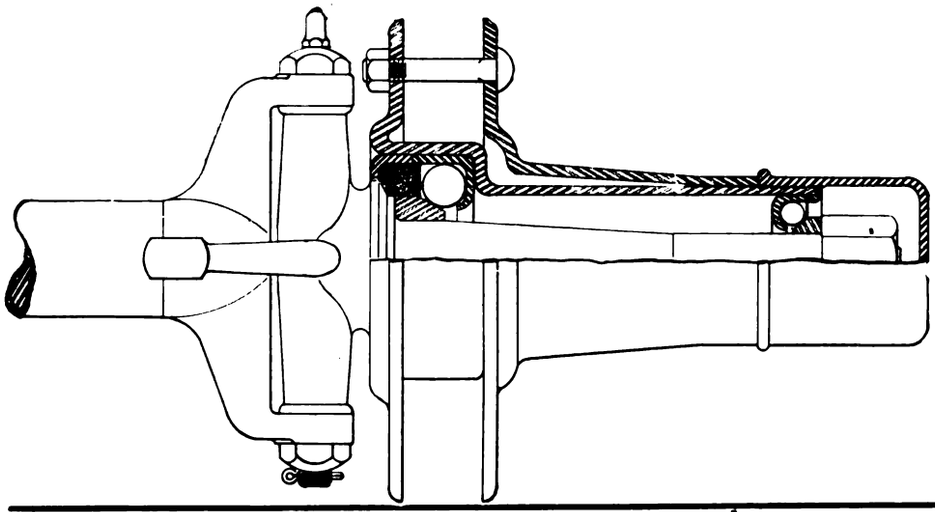
An active season is contemplated by the Cleveland Automobile Club. A tour and meet committee has been appointed, with Charles B. Shanks as chairman and W. C. Baker and W. L. White as the other members. A tour into Canada is planned for this summer, the intention being to go by boat to Detroit, thence across the ferry to Windsor, where the tour will really begin.

A race meet on the Glenville track is also talked of for May 30, but many members consider that too early, and favor a September date instead.

Collegiate Meet Possible.

There is talk of holding a combined intercollegiate and interscholastic automobile race meet. All colleges or schools having automobile clubs will be invited to enter, and the club scoring the greatest number of points in all classes will be declared winner and presented with a cup, which can be kept for one year. A meeting will be held, probably in this city, by the representatives of the various schools and colleges in the East some time next month.

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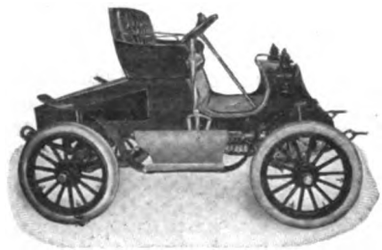
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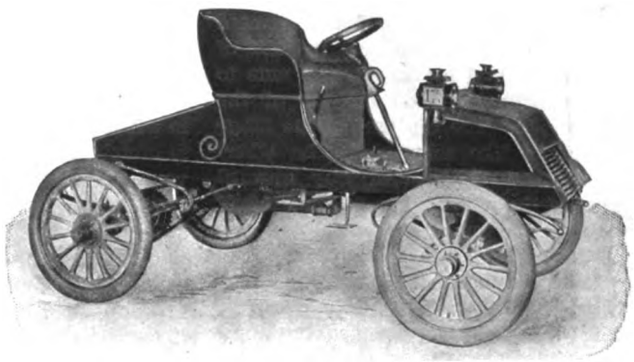
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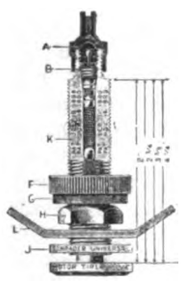
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His Home-Made Tilting Wheel.

Cheerfully crediting the idea to an American who had "contrived something of the kind," an English autoist relates how he has had a tilting steering wheel made for his own use.

"Having lately purchased a small car, I found much inconvenience in getting in and out of the driver's seat, after my wife had taken her place, the difficulty, of course, being caused by the position of the steering wheel, and the trouble being increased by having to wear a thick fur lined coat during cold weather. When driving, if I had to get out to attend to any matter in connection with the car or for any other purpose, much difficulty was experienced unless my wife got out first—a most convenient arrangement.

"With the aid of a good cycle maker I have devised a simple method of tilting the wheel vertically in front of the steering column, and by this means obviating the trouble. A small wrought-iron hinge is placed immediately under the wheel. This hinge is three inches square when closed, and is made of three-eighths inch iron plate. The pin of the hinge is also three-eighths inch in diameter, is three inches long and well riveted at each end. The bottom part or half of the hinge is secured by screws and nuts to the plate usually fixed on the top of the steering column. The top part of the hinge is fastened in like manner to the wheel itself. In order to prevent any upward movement of the wheel when driving, a bolt goes through the top of the wheel and also straight through both halves of the hinge and plate on the top of the steering column. This bolt is held in its position by a spring, and both bolt and spring are contained in a socket fixed into the top of the wheel. To tilt the wheel it is only necessary to pull up the brass knob fixed on the top of the bolt. The wheel and bolt fall into their places by the weight of the wheel."

Rhoads on the Horse.

Instead of being doomed the noble horse is destined to become more highly prized as the years pass. Neither automobiles nor flying machines can stay his progress.

"The horse is used now more extensively than ever and his use is growing," declared Dr. W. L. Rhoads in his annual address as president of the Pennsylvania State Veterinary Society, at Philadelphia last week.

"The bicycle, the automobile and other rapid mechanical devices that have sprung up of late have their uses, but they can never take the place of the noble horse, that will ever be a companion, as well as a useful beast, to its interested owners.

"The electric cars only extend our appreciation of the noble beast, and only the advent of a practical flying machine can decrease the interest steadily growing in the equine animal, and that, like other transportation machines, will decrease each interest only for a time.

"The increase of horse valuation within the last three years has been phenomenal, and will undoubtedly continue—due to the inadequacy of the supply compared with the demand, and this deficiency is going to increase from year to year."

A Timely Fable and its Moral.

When, in the long Process of Natural Selection, the Stag-Beetle was first evolved, he aroused great Jealousy and Disdain in the Thorax of the Cockchafer.

"Blundering Brute!" he buzzed, "with that big Body and those little Wings, he'll never be able to fly, I know."

But the Stag-Beetle soon falsified this Prediction, for in the Twilight of the very Summer's Day on which he was hatched he soared high towards the Stars, there disporting himself like an aerial Porpoise amid atmospheric Waves.

"Great Goat-Suckers!" boomed the enraged Cockchafer, who had hitherto regarded it as his own especial Province to wheel his droning Flight of a Summer's Eve. "Did you ever see anything so insecticidally reckless? Look! There he goes! Slap-Bang through a Swarm of helpless Gnats, taking off Legs and Wings in all Directions. This must be put a Stop to."

"I quite agree with you, my dear Buzzard-Clock," replied the Bumble-Bee, to whom these Remarks were addressed. "The way in which that lumbering Lout blunders along is simply intolerable. Let us at once convene the other Insects and bring his Conduct before them."

So the Insects were convened, and the Cockchafer moved, and the Bumble-Bee seconded, the following Resolution:

"That, in Future, no Stag-Beetle, when flying, be permitted to flap his Wings more than four Times per Minute."

"You have heard the Resolution," said the Hornet, who presided. "Would any Insect like to buzz to it?"

"I should," said the Wasp. "We have heard a good Deal about the reckless, blundering Stag-Beetle. But how about the lumbering, never-look-where-they're-going Bumble-Bee and Cockchafer? I move, Sir, that they also be included in this Resolution."

At this a loud Murmur, partly of Approval, partly of Dissent, arose. At length, Silence being restored, the Hornet pronounced:

"The Wasp is right. Clearly the Stag-Beetle is on all sixes with the Bumble-Bee and Cockchafer. Either, therefore, they must all have the same Freedom of Flight, or all be subject to the same Resolutions."

It ended in the Bumble-Bee and the Cockchafer sulkily withdrawing their Resolution.

Moral—What is Sauce for the Chauffeur-Goose should be Sauce for the Jehu-Gander. —London Truth.

The Week's Exports.

British Possessions in Africa—1 case motor vehicles and material, $1,000.

Berlin—8 cases motor vehicles, $1,755.

Hamburg—2 cases motor vehicles, etc., $2,842.

London—1 case motor vehicle material, $10.

Liverpool—1 case motor vehicles, $1,400.

Horses Barred From French Fete.

Horses are to be barred absolutely from the Mi-Careme fete at Paris, some fifty automobiles being selected to carry those who take part in the procession. As if that were not bad enough for the once proud equine, the Reine des Reines, or Queen of Queens, is a horse butcher!

When the Automobile Club of France gave the fete its approval, the French trade evinced an active interest in it. Elaborately and fantastically decorated cars are being got ready, and it is expected that the procession will be the most picturesque of the kind ever held. The De Dion-Bonton people are building the principal car, which will be the "clou" of the spectacle. Few will imagine that a machinist is hidden in the flower pot which will be a prominent feature of the vehicle.

Baron de Zuylen is to give a well filled pocketbook to the "Reine des Reines," and champagne and sandwiches are to be offered galore at the Automobile Club.

It is suggested that some of the big shops paying especial attention to automobile clothing shall design a costume for the Queen, who would, of course, be represented as a chauffeuss.

May Close 'Frisco's Reservation.

The Presidio Reservation, San Francisco, has been a favorite resort of automobilists, attracted by its fine, smooth roads and by the splendid view of bay and ocean. No hampering restrictions have been imposed upon the drivers of motor cars. Now, however, it seems that there is danger of the area open to San Francisco automobilists being still further restricted. The military authorities think that the motorists run at too high a rate of speed, and endanger the lives of the pedestrians, who are compelled, through the absence of sidewalks, to walk in the roads. Fast driving of horses is expressly forbidden by notices posted at all the entrances to the Reservation, and, if the automobilists continue to travel at great speed along the roads, the Commandant may exclude them altogether from the most picturesque spot in the city, and thus deprive many innocent persons of a delightful recreation. And such is the conservatism of the military mind that, once a commandant has issued orders for the exclusion of automobiles, it will be harder for the motorists to regain admission to the Reservation than to win over the Park Commissioners.

Haffen Promises Road Reform.

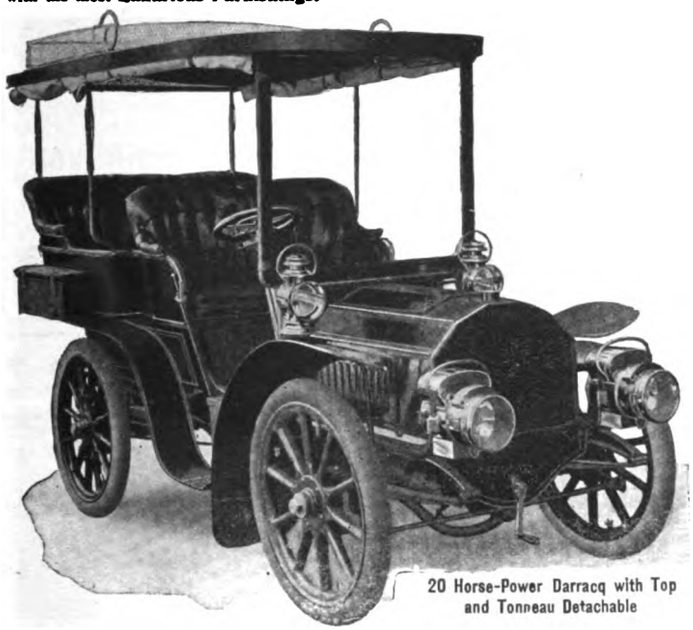
Immediate attention was promised by President Haffen of the Borough of The Bronx to the roads complained of by representatives of bodies interested in highway reform. The matter was brought to his attention on Friday last, when a public hearing took place in the New York City Hall. Jerome avenue above Harlem Bridge, and Broadway from Kingsbridge to the Yonkers line, were pointed out by President Shattuck of the A. C. A. as being in especially bad condition.

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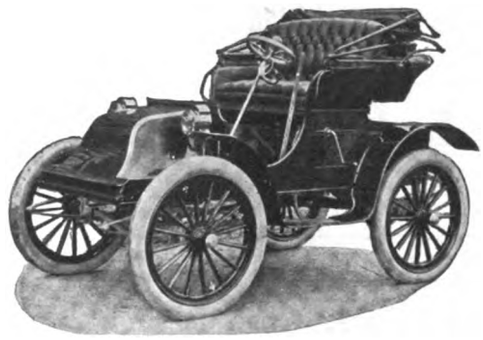
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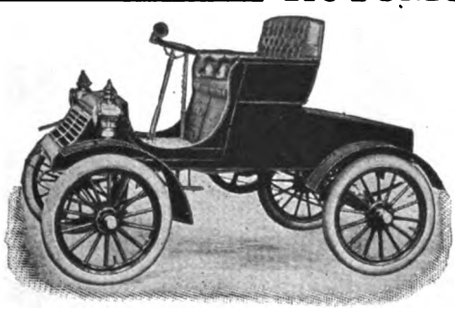
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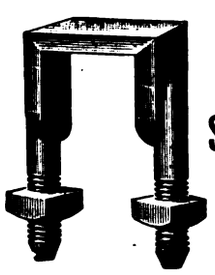
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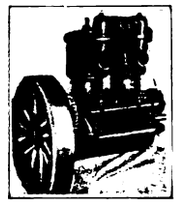
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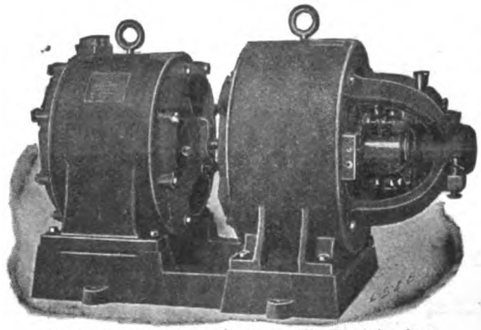


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The Week's Patents.

721,580. Power Propelled Agricultural Implement. David Lubin, New York, N. Y. Filed June 25, 1902. Serial No. 113,115. (No model.)

Claim—1. In an implement of the character described, a carriage, a motor, a digging tool supported on the carriage, and gearing operated by the motor for alternately propelling the carriage and operating the digging tool.

721,401. Variable Speed Gearing. Colcord Upton, Beverly, Mass., assignor to Upton Machine Co., a corporation of New York. Filed December 27, 1899. Serial No. 741,715. (No model.)

Claim—1. The combination of a driving part, a driven part, a sleeve mounted to rotate around the driving part and to which the driven part is connected, a rack mounted to rotate around the driving part, means to limit rotation of said rack, a gear in mesh with said rack, means for communicating independent rotation from the driving part to said gear, means to lock said rack to the driving and driven parts, meanc connecting said gear with said sleeve to actuate the latter and the driven part by the movement of said gear along said rack, a rack rigidly connected with the driven part, means to limit rotation of said rack, gearing connecting the driving part with said rack, a rotative member carrying part of said gearing, and means to limit rotation of said member, substantially as described.

721,413. Motor Car. Herbert Austin, Erdington, near Birmingham, England. Filed April 23, 1902. Serial No. 104,409. (No model.)

Claim—A motor car or vehicle having a motor with its shaft extending transversely of the axis of the vehicle, an intermediate or countershaft, parallel with the motor shaft, chain wheels on the respective shafts, a chain embracing said wheels through which the motor shaft drives the countershaft, the shaft parallel with the motor shaft and in two aligned lengths or parts, balance gear connecting the parts of shaft, sprocket wheels on the respective lengths of the shaft, sprocket wheels on the respective hind wheels of the vehicle, and chains for driving connecting the respective wheels, substantially as set forth.

721,682. Reversible Galvanic Battery. Thomas A. Edison, Llewellyn Park, N. J. Filed Nov. 28, 1902. Serial No. 133,119. (No model.)

Claim.—1. An oxidizable element for a reversible galvanic battery employing cobalt, which is oxidized on discharge, substantially as set forth.

2. In a reversible galvanic battery employing an alkaline electrolyte, an oxidizable element therefor employing cobalt, which is oxidized on discharge, substantially as set forth.

721,705. Vehicle. Charles W. Hunt, West New-Brighton, N. Y. Filed Oct. 31, 1902. Serial No. 129,522. (No model.)

Claim.—1. In a vehicle, comprising a single, continuous body oscillating middle and rear trucks supporting and connected by said body and a forward steering-truck or body, the combination of a motor supported by the forward truck or body, a transmission shaft operatively connected with the motor and comprising several sections, universal joints connecting said sections in the vertical planes of the middle and rear axles, whereby oscillation of one axle with respect to the other is permitted, and intermediate gearing between the driving-wheels of each truck and the corresponding section of the transmission shaft, substantially as shown and described.

721,724. Steering-Gear for Traction-Engines. Warren F. McBeth, Paxton, Ill., assignor of three-fourths to N. E. Crothers, J. S. Dennis and Erwin C. Bogardus, Paxton, Ill. Filed Aug. 13, 1902. Serial No. 119,564. (No model.)

Claim.—1. A steering-gear comprising a toothed segment pivoted directly to a suitable support and designed to be located in rear of the front axle of a vehicle or machine, rods extending forward from the toothed segment for connecting the same with the front axle and pivotally connected to each of such parts, a transverse shaft having a worm meshing with the segment, and gearing for rotating the transverse shaft, substantially as described.

721,859. Automobile Steering Mechanism. Herbert H. Buffum, Abington, Mass. Filed Jan. 23, 1903. Serial No. 140,235. (No model.)

Claim.—1. In a vehicle steering mechanism a swinging ground-wheel, rotary steering mechanism connected therewith, a swinging rotary steersman's pillar, and toothed gears connecting said pillar and mechanism and thrown into and out of mesh by swinging movement of said pillar.

721,872. Explosive Engine. Anton Evensen, Chicago, Ill., assignor of one-half to Charles R. Hannan, Council Bluffs, Iowa. Filed Nov. 2, 1900. Serial No. 35,203. (No model.)

Claim.—1. An explosive-engine comprising a main cylinder having endwise reciprocatory movement, a piston in the main cylinder, a main frame having parallel guides for the main cylinder, guide lugs on the main cylinder having sliding engagement with said parallel guides, a crank shaft having oppositely extending cranks, bearings for said shaft rigidly attached to the engine-frame, and connecting-rods connecting the main cylinder and the piston with the cranks of the crank-shaft.

721,873. Sparking Igniter for Explosive-Engines. Anton Evensen, Chicago, Ill., assignor of one-half to Charles R. Hannan, Council Bluffs, Iowa. Original application filed Nov. 2, 1900. Serial No. 35,203. Divided and this application filed Mar. 11, 1901. Serial No. 50,617. (No model.)

Claim.—1. The combination with an engine-cylinder provided with a valve-casing, having a tapered valve-seat, and a slot opening from the valve-seat into the cylinder, a valve-plug which has oscillatory motion in the valve seat, an electric conductor extending through and insulated from the valve-plug and having a terminal which projects from the bearing-surface of the plug into the said slot, and a spring-terminal secured to the cylinder wall with its free end overhanging said slot in position for contact of the first-mentioned terminal therewith in the oscillatory movement of the plug.

721,876. Automobile. Frederick L. Fay, Holyoke, Mass., assignor to Samuel M. Green, Holyoke, Mass. Filed Jan. 20, 1903. Serial No. 139,728. (No model.)

Claim.—1. In an automobile, a front and rear axle, wheels carried thereby, a flexible body extending fore and aft and connected to said axles, the connection between the body and one of said axles being direct, a spring located between the other axle and the other end of said body, a motor carried by a yielding portion of said flexible body, and means for connecting said motor with the driving wheel or wheels.

721,912. Running-Gear for Motor-Vehicles. James W. Packard and William A. Hatcher, Warren, Ohio, assignors to Ohio Automobile Company, Warren, Ohio, a Corporation of West Virginia. Filed Mar. 10, 1902. Serial No. 97,431. (No model.)

Claim.—1. In a motor-vehicle, the combination of the driving-axle, the frame, two-part springs extending transversely of the axle, each spring being composed of a part connected to the frame and a part connected to the axle, said parts being movable rela-



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tively to one another in the direction of their length, and longitudinally-adjustable stay-rods pivotally connecting the axle with the frame.

722,005. Sparking Igniter for Explosive-Engines. Charles E. Duryea, Peoria, Ill. Filed Apr. 3, 1900. Serial No. 11,313. (No model.)

Claim.—1. In an internal-combustion engine, an exhaust-valve and stem, a sparker journaled therein, an adjustable frame affixed to the sparker-stem, a spring for retracting the same, and a pawl carried by said frame, in combination with a yielding portion carrying said pawl and interposed between the cam-shaft and the sparker-stem of greater stiffness than the retracting-spring.

722,089. Change-Gear for Motor Road-Vehicles. Albert de Dion and Georges Bouton, Puteaux, France. Filed Sept. 10, 1902. Serial No. 122, 861. (No model.)

Claim.—1. In a change-gear for motor road-vehicles the combination of a shaft, a plurality of gear-wheels on said shaft, revolving therewith, a second shaft, a pair of clutches on said shaft, four gear wheels on said second shaft operated by said first-mentioned gear-wheels, means for shifting said last-mentioned gear-wheels relatively to said clutches so as to bring the first and third or second and fourth gear-wheels adjacent to said clutches, and means for operating one of said clutches independently of the other.

722,096. Traction-Engine. Benjamin T. Gibbons, Buffalo, N. D. Filed Aug. 29, 1902. Serial No. 121,502. (No model.)

Claim.—1. In a traction-engine, a motor thereon, a sprocket-wheel geared to said motor, a chain fixed at its opposite end and passing over said sprocket, traction-wheels for said engines, gearing therefrom to a motor, and means for shifting the driving power from the sprocket-wheel to the traction-wheel, substantially as specified.

722,146. Piston-Head. Archibald J. Robertson, Chicago, Ill. Filed Apr. 2, 1902. Serial No. 101,092. (No model.)

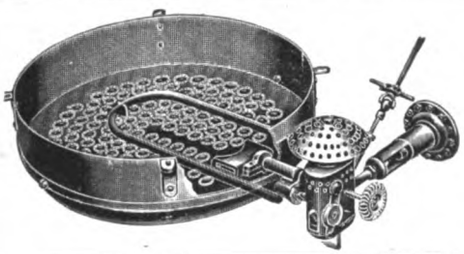
Claim.—1. In a piston for reciprocating engines, the combination, with a primary piston-head provided with an interior chamber and a piston-rod extending into said chamber, of a secondary head or disk rigidly attached to said rod to reciprocate within said chamber, and means for giving elasticity to the relative movement of said primary and secondary heads.

722,164. Fastening Device for Vehicle-Tires. Frank P. Stone, Chicago, Ill. Filed Mar. 27, 1902. Serial No. 100,323. (No model.)

Claim.—1. The combination with a channel-rim and a rubber tire-body seated therein and having its meeting ends longitudinally socketed, of fastening means for securely uniting said meeting ends of the tire-body, comprising a connection-strip secured centrally to, and disposed parallel with and slightly above, the base of the channel longitudinally thereof, said connection-strip being housed within the socketed meeting end portions of the tire-body, and means serving to unite the extremities of the connection-strip with the base of the channel and thereby clamp the base portion of the tire-body to the base of the channel beneath said connection-strip, substantially as described.

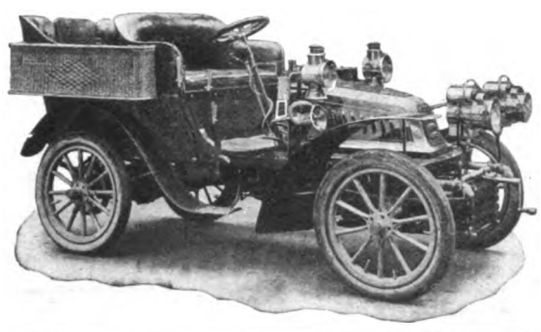


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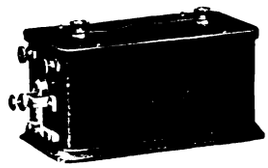
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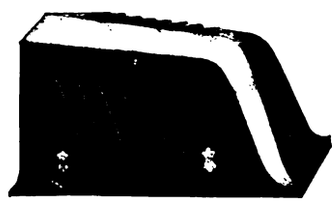
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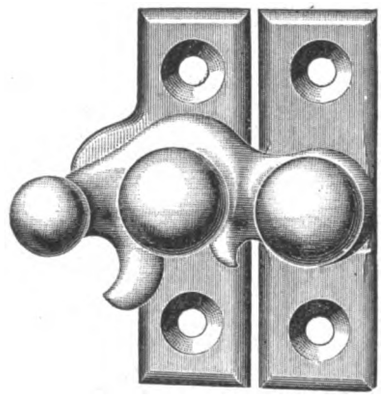
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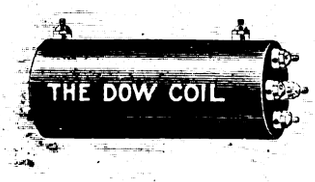


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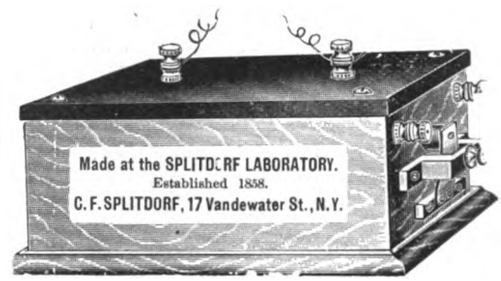
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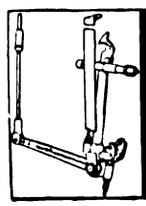
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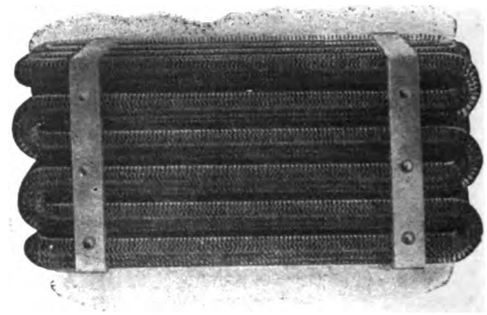
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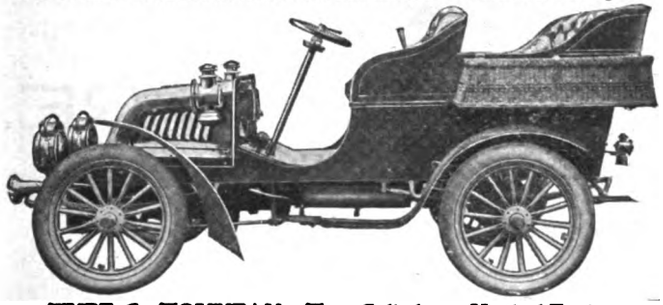
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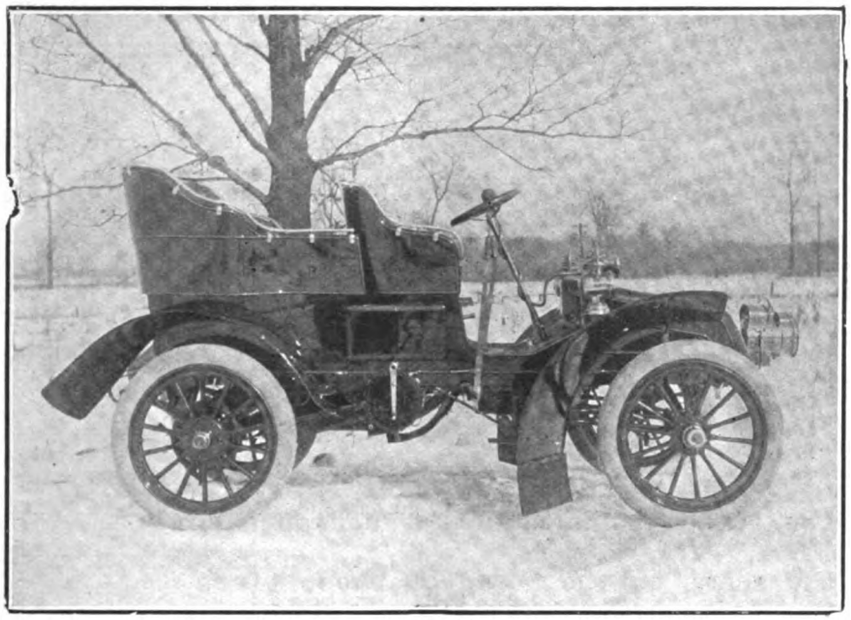
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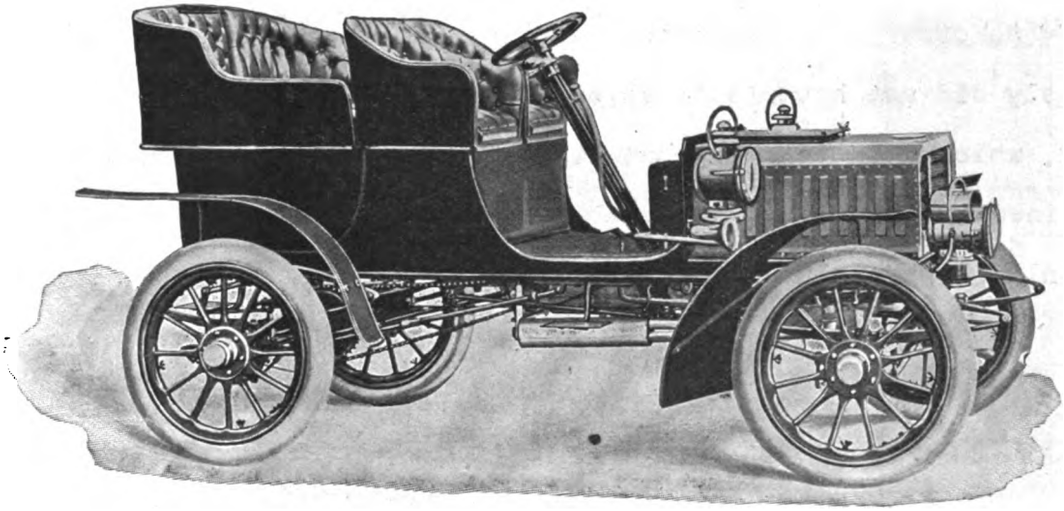
CHICAGO, Pardee & Co., 1404 Michigan Boulevard.
LOS ANGELES, Norman W. Church, 439 S. Main St.
SAN FRANCISCO, H. B. Larzalere, 1814 Market St.

BUFFALO'S PIONEER AUTOMOBILE MANUFACTURER

EXPERIENCE COUNTS AND WE HAVE HAD FIVE YEARS OF IT.

Can you afford to sell your customers experiments? Our touring car is unsurpassed in quality and equipment by any.

Prompt Deliveries.



The CONRAD 8 H. P. Gasolene Runabout is the only one made in U. S. having a vertical double cylinder motor, wheel steer and sliding gear transmission, which sells for less than $1000.

Price $750

CONRAD GASOLENE 12 H. P. TOURING CAR. PRICE $1250.00.

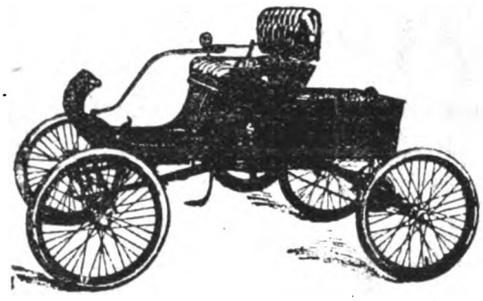
THE CONRAD MOTOR CARRIAGE COMPANY, 1413-1419 Niagara Street, Buffalo, N. Y.

AGENCIES

NEW YORK CITY—Pennsylvania Electric Vehicle Co., 152 West 18th St.; BOSTON—Bates Brothers, 145 Columbus Ave.; PHILADELPHIA—Pennsylvania Electric Vehicle Co., 250-256 North Broad St; PITTSBURG—L. G. Martin Co., 3995 Forbes Ave., opp. Hotel Schenley; MINNEAPOLIS—Northern Cycle Supply Co., 116 So. Sixth St.; ROCHESTER—F. A. Mabbett, 66 East, Ave.; BINGHAMTON — Binghamton Automobile Station, 259 Water St.; DETROIT — W. H. Weber, 288 Woodward Ave.; DENVER — Felker Cycle Co.; CHICAGO—Chas. P. Root, 435 Wabash Ave.; INDIANAPOLIS—S. W. Elston, 2325 E. Ohio St.; AKRON, OHIO—J. W. Miller & Co.; WATERTOWN, N. Y.—W. C. Greene, Washington Hall Block.

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GOODRICH CLINCHER AUTOMOBILE TIRES ARE DECLARED "MARVELS OF WORKMANSHIP."



TELEPHONE, 6664-38TH

THE OLDSMOBILE CO.

138 WEST 38TH ST.

New York, Oct. 18, 1902.

THE B. F. GOODRICH CO.,

Akron, Ohio.

Dear Sirs:

As per our telegram the tires we used in the Endurance Run were perfectly satisfactory. The seams on the tread of these tires were visible when we returned, and there was not a cut or scratch of any kind to show that these tires had been used. We wish to thank you for the attention we received at the hands of the representative of your company throughout the entire Run. We were met at almost every control by someone who was interested in the welfare of your tires and ready to offer any assistance necessary in the care of them. We fortunately did not have to touch our tires from the time we left New York, which goes to show that they are marvels of workmanship. We are inclined to think that the double tube tire for a light machine, is the only proper solution of the tire proposition.

Again thanking you for your courtesy, we are

Very truly yours,

OLDSMOBILE COMPANY,

E. M. Swayze

THE B. F. GOODRICH CO., - Factories, AKRON, OHIO.

BRANCHES:

NEW YORK, 66-68 Reade St., BUFFALO 9 West Huron St., CHICAGO, 141 Lake St., PHILADELPHIA, 922 Arch St., SAN FRANCISCO, 392 Mission St., DETROIT, 80 E. Congress St., BOSTON, 187 Summer St., DENVER, 1444 Curtis St., LONDON, ENGLAND, 7 Snow Hill, E. C.

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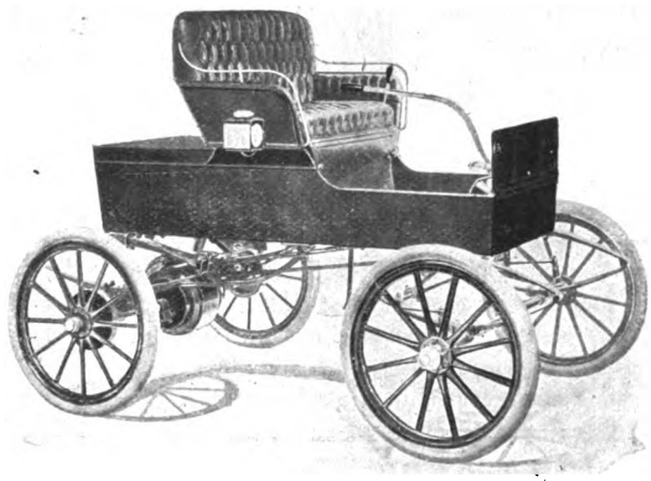
The Ever Ready — Waverley — The Always Reliable

IF you want an automobile that you can depend on absolutely "to get there and come back"—"WAVERLEY" is the answer.

Our 1903 models are a combination of lightness, beauty of design, elegance of finish, durability and reliability not found in any other motor vehicle made.

We build many desirable models for business or pleasure.

Catalogue and the name of our agent in your territory sent on request.



MODEL No. 21.

INTERNATIONAL MOTOR CAR CO., WAVERLEY FACTORY **Indianapolis, Indiana.**

RESULTS at the NEW YORK SHOW Prove the "YALE" MOTOR CAR a Success.

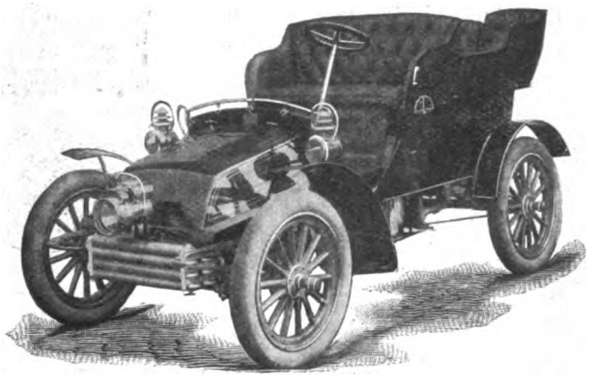
WE DEMONSTRATED TO ALL COMERS AND DID BUSINESS.

A RATIONAL VEHICLE,

AT A RATIONAL PRICE,

$1750.

NO VARIATIONS.



SIMPLICITY—
STRENGTH.

ELEGANCE IN DESIGN.

THOROUGHNESS IN WORKMANSHIP.

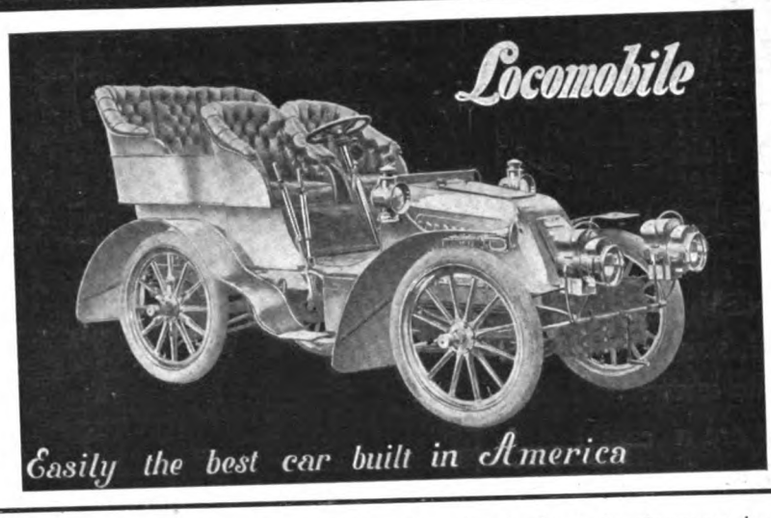
WE HAVE APPOINTED THE FOLLOWING AGENTS AND WILL CONSIDER A FEW MORE:

THE DU BOIS COMPANY, Ltd., London, England.
PARDEE & COMPANY, Chicago, Ills.
CENTAUR MOTOR VEHICLE COMPANY, Buffalo, N. Y.
W. B. METZGER, Detroit, Mich.
F. J. READ, Newtonville, Mass.
QUILLING BROTHERS, Cleveland, Ohio
JAMES LUCEY Troy, N. Y.
HYSLOP BROTHERS, Toronto, Ontario.
N. W. CHURCH, Los Angeles, Cal.

THE KIRK MANUFACTURING COMPANY, Toledo, Ohio.

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AMERICAN.
ORIGINAL.
SUBSTANTIAL.
TRULY SIMPLE.
SILENT.
SMOOTH RUNNING.
CONVENIENT.
POWERFUL.
COMFORTABLE.
BEAUTIFUL.



SELF-OILING ENGINE.
NEW STYLE MUD GUARDS.
SENSIBLE IGNITION.
Plug Won't Short Circuit.
JUMP SPARK.
SPECIAL COILS.
20 GALLONS FUEL.
7 GALLONS WATER.
Centrifugal Geared Pump.
CIRCULATION GAUGE.
All Bolts Case-Hardened.

THE 16-H. P. four-cylinder touring car shown above represents the best development in gasolene automobiles up to date. IMPROVEMENTS:—Throttle control from steering wheel, simplified sliding gear transmission (interlocking); all steel CHASSIS, allowing customer to order any desired body; valves removable in minimum time; spark-plugs connected to cables by chains, thus preventing snapping of wires. We make both 9 H. P. and 16 H. P. cars and employ the front vertical motor exclusively. Many other advantages. Write for full information.

THE LOCOMOBILE COMPANY OF AMERICA, 7 East 42d Street, New York.

BRANCHES: Boston, Philadelphia, Chicago, Bridgeport, Conn., London, Paris.

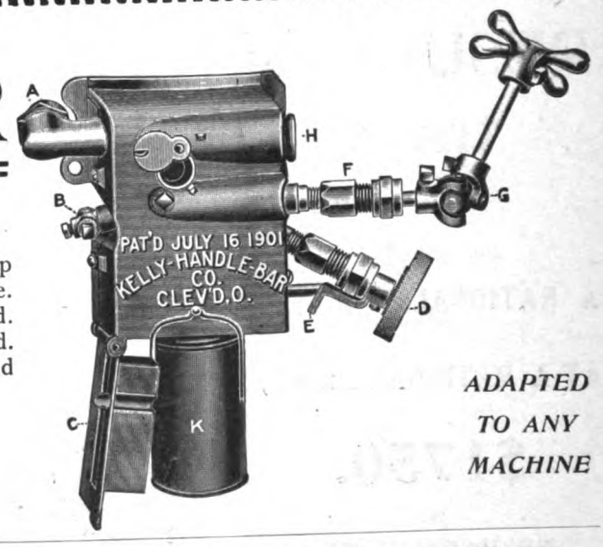
THE LOCOMOBILE COMPANY OF AMERICA EXECUTIVE OFFICES WILL BE MOVED TO BRIDGEPORT, CONN., ON APRIL 1st.

THE NEW

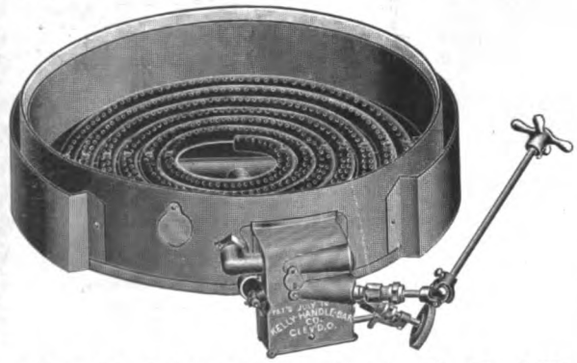
KELLY GENERATOR

for Steam Vehicles is a Trouble Saver.

No Steam Car is complete without one. Does away with drip cups and all annoyances. Perfected in every way and always reliable. Strongly made with all connections outside. Easily adjusted. No flaring or flashing in lighting, even in the strongest wind. Main fire controlled at seat. Compact and neat in appearance and enclosed in aluminum case.



ADAPTED TO ANY MACHINE



The New One-Piece Steel Tubular Burner

with entirely new casing. Has no gauze or holes in the bottom, the air being taken in from the ends. Absolutely eliminates all danger of fire under-lapping. As there are no air-tubes through the continuous stop-tube the burner even if red-hot cannot back fire. One of the most important improvements yet made. Thoroughly tested—as are all our products. Write for circular.

KELLY HANDLE BAR COMPANY, - Cleveland, Ohio.

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VICTORIES:

Merrick Road Race, April, 1900.
The 1,000 Miles Trial, May, 1900.
Paris Exposition, 1900.
Exelberg Hill Climbing Contest.
Pike's Peak.
500 Miles Endurance Run.
Glasgow Reliability Trials
Pan American Exposition.
Speed Trials, Coney Island Boulevard.
Eagle Rock Contest.



VICTORIES:

Roslyn Hill, April, 1902.
Liverpool Exhibition, 1902
Paris-Nice 600 Miles Caravan.
Bex Hill Speed Trials.
100 Miles Run, New York to Bridgeport.
Staten Island Speed Trials
Chicago Club, 100 Mile Test.
650 Miles Reliability Trials.
New York Boston Run.
Eagle Rock Hill, 1902.

THE Locosurrey illustrated above is one of our 1903 Steam Models. A fine family car for city or country use. IMPROVEMENTS. Steam water and air pumps; Klinger gauge; Pilot light; very large water and fuel tanks; superheated steam; enlarged boiler; two sets independent brakes—Many other attractive improvements. We are the pioneer builders of steam cars in this country and have placed 5,000 Locomobiles in the hands of customers. Our experience, therefore is unequalled and our cars are the best. Write for new booklets.

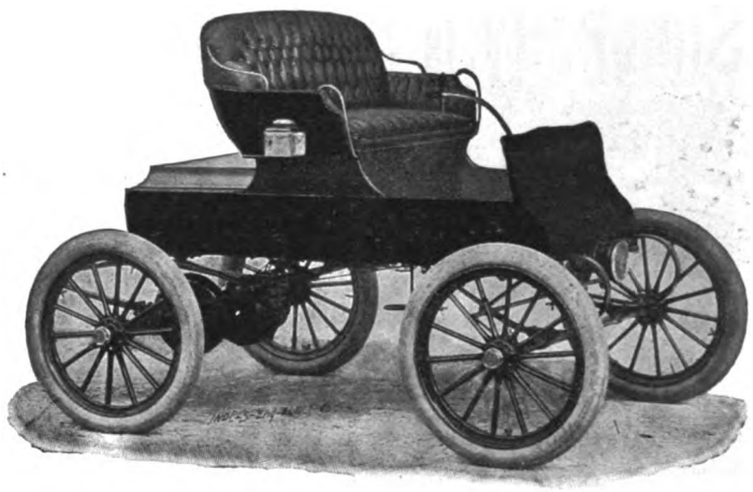
THE LOCOMOBILE COMPANY OF AMERICA, 7 East 42d Street, New York.

BRANCHES: Boston, Philadelphia, Chicago, Bridgeport, Conn., London, Paris.

THE LOCOMOBILE COMPANY OF AMERICA EXECUTIVE OFFICES WILL BE MOVED TO BRIDGEPORT, CONN., ON APRIL 1st.

An Open Letter to

Automobile Dealers



You are in the business to make money. Your profits depend upon Automobiles sold by you in your territory. Why confine your selling efforts to any one kind of power? All powers have their advantages. The Electric embodies many features of practical worth with a minimum of trouble. **NATIONAL ELECTRICS** represent that which is the best in the Electric field. To add our line, you are only showing good business judgment. Electrics are going to sell. Why spend your time talking other powers when a customer wants a **NATIONAL?** The National agency will prove to be a most valuable asset and money maker. Think it over and write us about our prices, terms and catalogues

National Motor Vehicle Co., 1400 East 22d Street, INDIANAPOLIS, INDIANA.

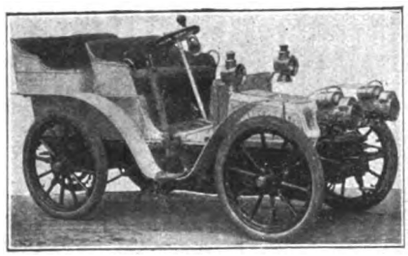
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FRENCH AND AMERICAN AUTOMOBILES.

Agents for THE ELECTRIC VEHICLE CO.

AGENTS FOR
Paris Automobile Societe Anonyme
HENRY FOURNIER Mg

11 & 18 H. P. MORS
1903 Model
Attracted special attention
PARIS AUTO SHOW.

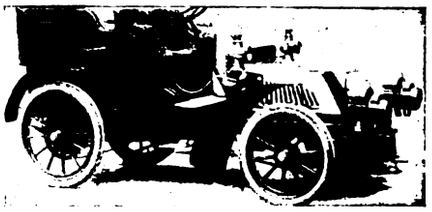


8 H. P. MORS.

REPAIRS.

THE CENTRAL Automobile Co.
1684 BROADWAY.
TELEPHONE: 2397 / 2398 } COL.

STORAGE.



10 H. P. PEUGEOT.

Prompt Deliveries of 8, 11, 18 H. P. MORS

OPEN DAY AND NIGHT.

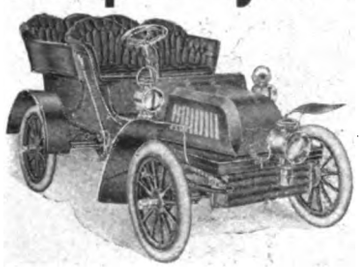
Prompt Deliveries of RENAULT, PEUGEOTS, Mercedes.

LARGEST AND BEST EQUIPPED AUTOMOBILE DEPOT IN THE UNITED STATES.

ALL KINDS OF FRENCH AUTOMOBILE PARTS KEPT IN STOCK.

ELECTRICS CHARGED AND KEPT IN FIRST-CLASS ORDER.

Simplicity is Perfection



This old saying is especially applicable to automobiles. The simplest car will give least trouble.

PRICE, $1,250 and $1,400.

Of Special Importance

to the man who desires to drive and care for his own automobile.

We Absolutely Guarantee

The Thomas Tonneaus to be the easiest to learn and care for.

What More can be Asked

when to the above you have a car of such commanding grace, lightness, strength and power?

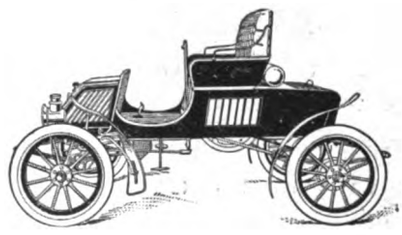
Dealers wishing this Agency are advised to close at once.

E. R. THOMAS MOTOR CO.,
1210 Niagara St., Buffalo. N. Y.

AT $1.00 A POUND,

the customary way of estimating the value of an automobile, the

Rambler



TOURING CAR

is worth $1,250. Designed for service and lasting qualities, we do not see where we can lighten it without impairing its efficiency. Price, at the factory,

$750.

A season's use over all roads in almost all countries, has demonstrated the modesty of our claims. Our booklet W tells about them; can we send you one?

THOMAS B. JEFFERY & CO., Kenosha, Wisconsin.

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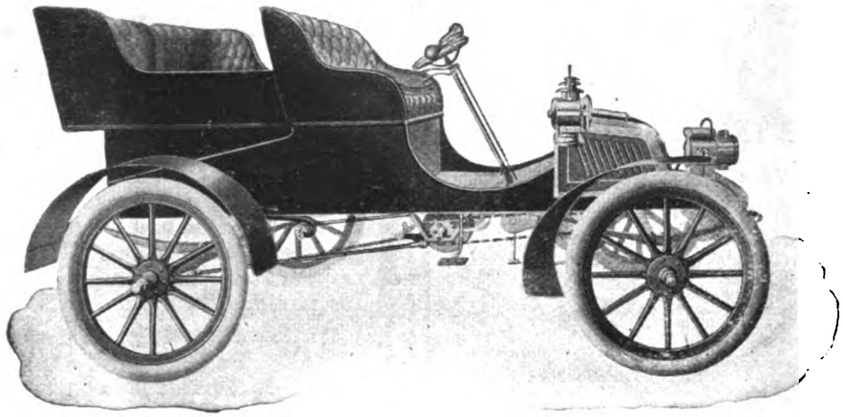
We are not included in **THE GET-RICH-QUICK CONCERNS** identified with the automobile trade.

WE ARE NOT LOOKING FOR "ALL THERE IS IN IT."

WE ARE BUILDING NOT ALONE FOR TODAY, BUT FOR TOMORROW.

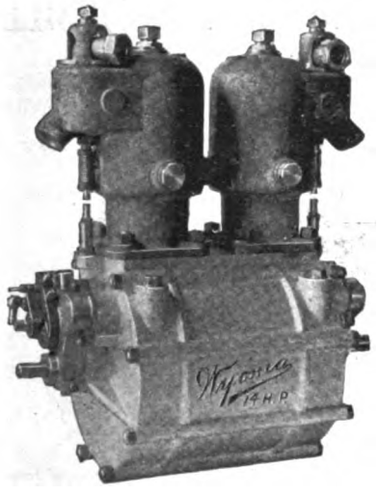
The 7 H.P. ELMORE Runabout and 10 H.P. ELMORE Touring Car

ARE OFFERED AT REASONABLE PRICES AND BETTER CARS CANNOT BE HAD FOR AN AMOUNT OF MONEY.



WILL YOU TAKE THE TROUBLE TO INVESTIGATE?

ELMORE MFG. COMPANY, - Clyde, Ohio.



WYOMA GASOLENE MOTOR
Single Cylinder, 8 H. P., 135 pounds.
Double Cylinder, 14 H. P. 265 pounds.

RELAY MOTOR CAR CO.,

Tenth and Exeter Sts., Reading, Pa.

MANUFACTURERS OF

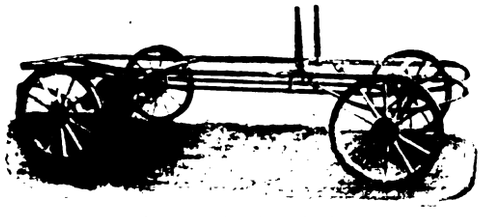
GASOLENE MOTORS, DIFFERENTIAL SPUR GEARS, TRANSMISSION GEARS, TUBULAR RUNNING GEARS, RADIATING COILS, MUFFLERS, ALUMINUM AND BRASS HOODS, WOOD AND WIRE WHEELS, CARBURETERS.

Our Motors are of French Type, Water Cooled, And Equal in Finish and Service to Best Foreign Makes.

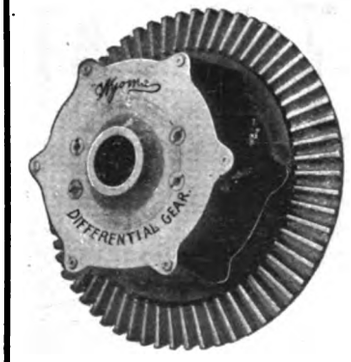
The Differential Gear has Manganese Bronze Bevel Gear. fitted for either 1¼, 1⅜, or 1½ inch axles. Is made for Direct Drive, Rod Transmission, and also with chain Sprocket.

The Transmission Gear is built on a new system. No Bevel Gears. Gears always in Mesh. Ball Thrust at each end of Shaft. Enclosed in Aluminum Case. Will transmit up to 20 H. P.

We make a Tubular Running Gear for Tonneaus that is a marvel of workmanship, finish and construction. All material is of the best and the Bearings are extra heavy. The Differential on this is fitted for either Sprocket or Bevel Gear.



TUBULAR RUNNING GEAR FOR TONNEAUS
80-inch Wheel Base. 54-inch Tread.



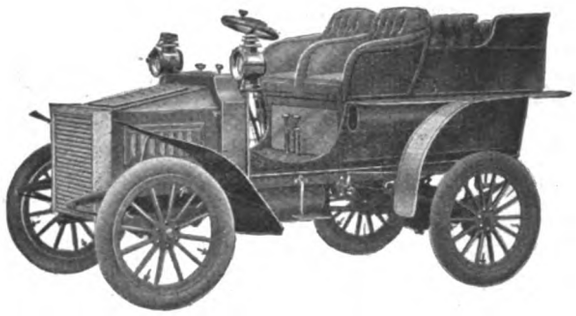
WYOMA DIFFERENTIAL SPUR GEAR
8 pitch, — 60 teeth.



WYOMA TRANSMISSION GEAR
3 Speeds forward and 1 Reverse.

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The NEW WHITE STEAM TONNEAU for 1903



AN AUTOMOBILE THOROUGHBRED.

The White Steam Motive power has made records in reliability contests, in races, and in every-day use which speak for themselves.

Write for full particulars, diagrams of engine, experts' reports and official results of important endurance contests.

WHITE SEWING MACHINE CO.,

(Automobile Department) **CLEVELAND, OHIO.**

22 Union Square, New York, N. Y.
509 Tremont St., Boston, Mass.
300 Post St., San Francisco, Cal.
212 Woodward Ave., Detroit, Mich.
609 Main St., Buffalo, N. Y.
300 Rose Bldg., Cleveland, Ohio.
4259 Olive St., St. Louis, Mo.
1761 Stone St., Denver, Colo.
5979 Centre Ave., East End, Pittsburg. Pa.
BANKER BROTHERS CO., 629-631-633 N. Broad St., Philadelphia, Pa.
F. O. BAILEY CARRIAGE CO., Portland, Maine.
WALTER C. WHITE, European Representative, 49 Princes Street, Westminster, London, England.

YOU

have no idea how much good there is in an

AMERICAN GASOLENE AUTOMOBILE



Why not look into the matter, and get the most solid comfort possible at a minimum cost? You wont regret it. The best material money can buy goes into the construction of this GUARANTEED SUCCESS.

You will be interested in terms to agents. Write for catalogue.

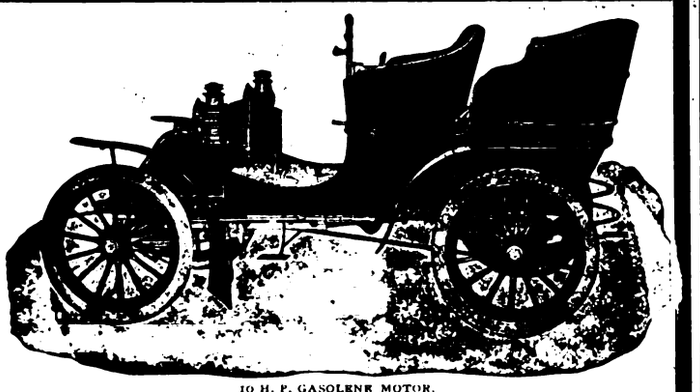
THE AMERICAN MOTOR CARRIAGE CO.,

514–520 East Prospect Street, CLEVELAND, OHIO.

DISTRIBUTORS:

PARDEE & CO., 1404-1406 Michigan Boulevard, Chicago, Ill.
STANDARD AUTOMOBILE CO., 136 West 38th St., New York City.
DRISKO, SNOW & ROSS, Inc., 43 Columbus Ave., Boston, Mass.
WM. F. RUDOLPH, 302 North Broad St. Philadelphia, Pa.
H. B. LARZELERE, 1814 Market St., San Francisco, Cal.

THE AUTOCAR



10 H. P. GASOLENE MOTOR.

Is a Harmonious Whole.

It is not successful because of the excellence of any one feature, but because it is a better combination of carefully worked out details, a symphony of mechanical construction, the most satisfactory automobile production of the year—and the price is equitable. Catalogue and information upon request.

THE AUTOCAR CO., Ardmore, Pa.

STUDEBAKER ELECTRIC AUTOMOBILES

NO EXPERT CHAUFFEUR NEEDED.

Can be Run Any Day in the Year, by Any Member of the Family.

Wide Touring Radius. A Successful Hill Climber. Smooth Operation. Reliable Brake Control. Great Strength of Construction.



Descriptive Catalogue on Application. Can be seen at the Following Repositories, where we also show a full line of the celebrated vehicles and harness.

STUDEBAKER BROS. MFG. CO.

Studebaker Bros. Co., of New York, Broadway and Seventh Ave., Cor. 48th St., New York City.
Studebaker Bros. Mfg. Co., 378 to 388 Wabash Ave., Chicago, Ill.
Studebaker Bros. Mfg. Co., Cor. 15th and Blake Sts., Denver, Colo.
Studebaker Bros. Co., of Utah, 157 to 159 State St., Salt Lake City, Utah.
Studebaker Bros. Mfg. Co., 317 to 319 Elm St., Dallas, Texas.

Branch Houses and Selling Agents:

John Wanamaker, New York City.
H. G. Martin & Co., Providence, R. I.
W. H. Weber, Detroit, Mich.
C. H. Morrison, Topeka, Kansas.
John Wanamaker, Philadelphia, Pa.
The Paterson Automobile Exchange, Paterson, N. J.
Rochester Automobile Co., 150 South Ave., Rochester, N. Y.
Toledo Motor Carriage Co., Toledo, O.
Cleveland Automobile and Supply Co., 146 Prospect St., Cleveland, O.
Seeds & Evans, 67 E. Gay St., Columbus, Ohio.
Cincinnati Automobile Co., 807 Race St., Cincinnati, O.
The Halsey Automobile Co., 4259 Olive St., St. Louis, Mo.

FACTORY AND GENERAL OFFICES, SOUTH BEND, IND.

First-Class Agents Desired in Territory not already Covered.

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EAGER HANDS,

impelled by sound brains, are reaching out from everywhere for the Cadillac Agency.

You all know why! It's the proposition for 1903. Better get in line now.

CADILLAC

"It's just good all over"

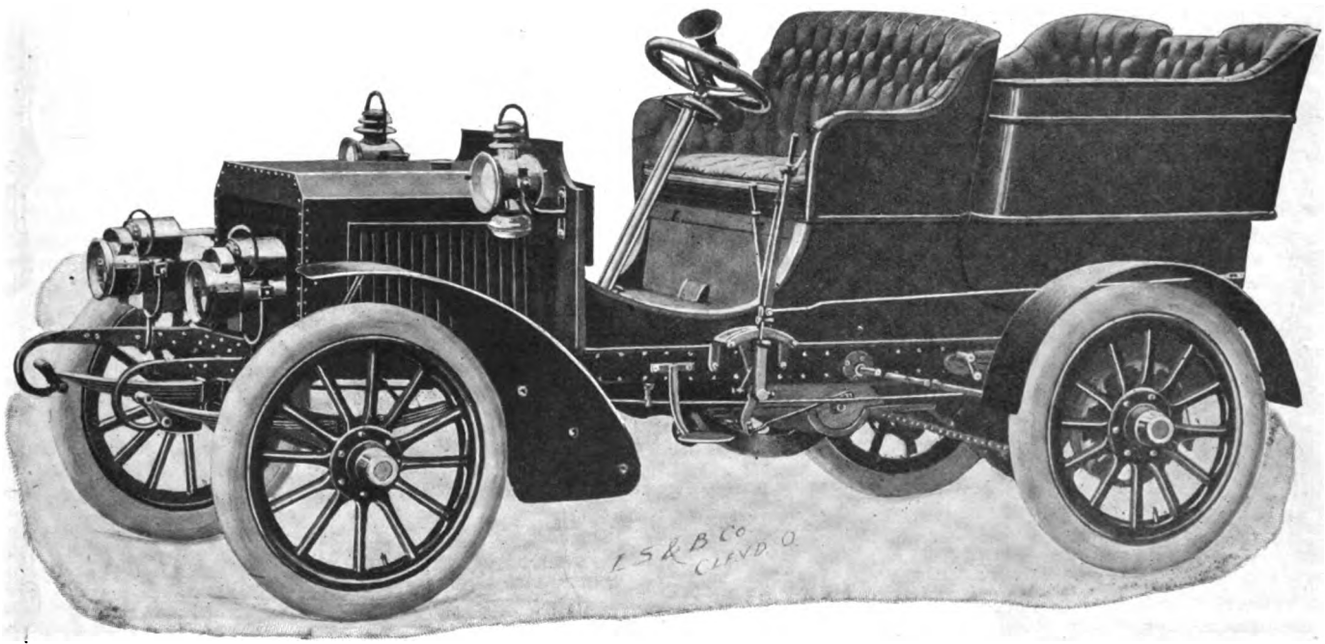
CADILLAC AUTOMOBILE CO., Detroit, Mich.

AGENCIES:

Cadillac Automobile Co. of Illinois, Chicago, Ill.
Cadillac Co. of New York, New York City.
John Wanamaker, Philadelphia, Pa.
William E. Metzger, Detroit, Mich.
Pence Automobile Co., Minneapolis, Minn.
Conrad Fuelle Co., Indianapolis, Ind.
American Cycle Mfg. Co., Boston, Mass.
American Cycle Mfg. Co., Providence, R. I.
American Cycle Mfg. Co., Washington, D. C.
Cleveland Automobile & Supply Co., Cleveland, O.
Oscar S. Lear, Columbus, Ohio.
Centaur Motor Vehicle Co., Buffalo, N. Y.
Crescent Automobile Co., Jersey City, N. J.
New Jersey Automobile Co., Newark, N. J.
A. T. Wilson, Denver, Col.
R. V. Connerat, Savannah, Ga.
Houghton Implement Co., Grand Forks, N.D.
Michigan Automobile Co., Grand Rapids, Michigan.
Peckham Carriage Co., Dayton, Ohio.
The Hanauer Automobile Co., Cincinnati, O.
P. O. Bailey Carriage Co., Portland, Me.
Norman W. Church, Los Angeles, Cal.
R. W. Whipple, Binghamton, N. Y.
Theodore Jonas, Milwaukee, Wis.
Adolph A. Geisel, Springfield, Mass.
Birney A. Robinson, Worcester, Mass.
James Lucey, Albany and Troy, N. Y.
Fred. A. Mallett & Co., Rochester, N. Y.
Irvin W. Dill Carriage Co., Harrisburg, Pa.
Brown, Thomson & Co., Hartford, Conn.
Charles E. Whitten, Lynn, Mass.
Murphy Bros., Erie, Pa.
Hyslop Bros., Toronto, Ont.
Elmira Arms Co., Elmira, N. Y.

THE STEARNS CAR

Received a lot of very favorable comments at the show.

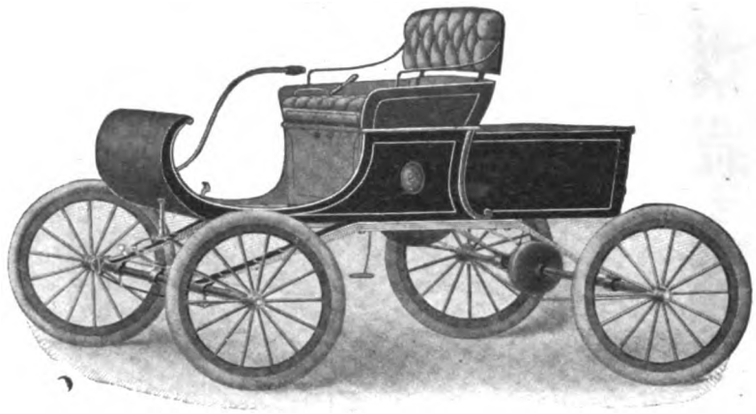


The style and general design is right. The motor is powerful, with a perfect throttle, and runs silently and with no vibration. The attachments on the dash and controls at the wheel are good points, too. The small tube radiator is ahead of the time, and considering all things, **STEARNS CARS are worth more than they cost.**

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WRITE FOR ILLUSTRATED BOOK TO

Olds Motor Works, 1332 Jefferson Ave., Detroit, Mich.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, March 19, 1903. No. 25

INTEREST AT LAST AROUSED

N. A. A. M. Stirring and Assures American Industry's Fit Representation at St. Louis.

All doubts regarding a representative showing of American automobiles at the St. Louis Universal Exposition next year have been set at rest. The National Association of Automobile Manufacturers has steppel into the breach and practically taken upon itself to see that the exhibits from this country are in keeping with the importance and dignity of the industry. Neither France—whose makers have already taken steps to secure the space for an imposing showing—nor any other country will be permitted to over shadow the United States as until now has seemed likely. Sufficient assurances of support have been received from prominent makers to render this certain.

Although no charge is made for spaces, and it is the intention of the Exposition managers to give great prominence to this class of transportation vehicles, automobile makers have hitherto been apathetic. Efforts made to arouse their interest were entirely unsuccessful. It looked as though the section would be made up of foreign cars, with only a sprinkling of those of home manufacture. To prevent such an unfortunate contretemps, W. A. Smith, Chief of the Department of Transportation Exhibits, appealed to the N. A. A. M. and enlisted its active support. To the Motor World representative on Saturday, President Budlong, of the N. A. A. M., in answer to the question whether there was a prospect of these efforts being crowned with success, said:

"A very good prospect indeed. We have been in correspondence with our members, and the replies received leave no doubt, in my mind, that a sufficient number will consent to make a fine showing.

"You see, it is not a question of being a money making scheme. No concern would show at St. Louis expecting to secure a lot of business thereby. But it is something that we, as a nation, cannot afford to let come to naught. Patriotic motives, if nothing else, should actuate makers to exhibit. It would not do for us to let the French makers have the only respectable exhibits. Speaking for the Electric Vehicle Co., I will say that this is the view taken of the matter, and we wil act in accordance with it. So will a number of other makers, I feel sure, as they have so intimate in the course of the correspondence brought out by the N. A. A. M."

In its efforts to secure a fitting representation the N. A. A. M. is outlining a plan for lessening the expense while at the same time enhancing the benefits to be derived from the exhibits. Th association proposes to engage space at St. Louis and to look after the exhibits after they are staged. Competent attendants would be provided to explain the features of the different cars and to furnish any information concerning them that might be desired.

Exhibitors would not be obliged to make use of these attendants, however. They could, if they preferred, have their own men for the service, and in all other respects look after their exhibits in their own way.

Chicago Fixed for Five Years.

It seems evident that Mr. Samuel A. Miles means to retain the whip hand of the show situation in Chicago.

According to reliable private advices received this week the owners or management of the Chicago Coliseum have entered into a contract with him whereby there is secured to Miles for a term of five years the exclusive right to promote and conduct all functions in which automobiles are concerned which may be held in that building.

As it is the only structure in the city suitable for affairs of the sort, the contract makes plain that none will be held until Mr. Miles is "seen" and arranged with.

Suit Over Electric Welding.

The Thompson Electric Welding Co. has filed a bill of complaint in the United States District Court for Connecticut against the American Tube & Stamping Co., of Bridgeport, Conn. Infringement of a patent process of electrical welding is alleged, and an injunction and an accounting asked for.

Stevens-Duryea Price Advanced.

An advance in the price of the Stevens-Duryea gasolene car has just been made. The new price is $1,300, as against the $1,200 previously charged. The top and complete equipment are included.

MAY BE BUT ONE SHOW

Makers Association Disscusses and has Subject Under Advisement—Chauffeurs Also Considered.

Expressions of opinion, recorded in the Motor World at the time, regarding the results of the Chicago show, and indicating a feeling that in future there should be one national show held, and that at New York, have already borne fruit. The matter was brought up on Wednesday afternoon, when the executive committee of the N. A. A. M. met in this city. The suggestion to hold a single show here was made, and it was discussed at some length. Some members favored such a course, others opposed it. In the end the entire matter was referred to a committee of three, which will report at a future meeting.

The matter of securing an adequate showing of motor vehicles at the St. Louis Exposition was also referred to a committee of three. The committee already appointed to consider the chauffeur question was not ready to report. Consequently that matter went over also.

The meeting of the executive committee was preceded by a general meeting of the association. Its purpose was the consideration of changes in the constitution and by-laws. It had been reported that an important change relative to the associate membership would be made, but nothing was done in the matter. A number of unimportant changes, designed to bring the different sections into harmony and to remove some slight inconsistencies, were carried through, however.

Pardee Comes to New York.

Quite the most unexpected news of the week is contained in the announcement that Pardee & Co., the well-known Chicago dealers, have taken over the store at 317 West Fifty-ninth street, this city, and will be in charge of the Packard interests. Colonel Pardee will, for the time being, make his headquarters here.

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MOST VICIOUS OF ALL LAWS

Pennsylvania Senator Proposes an Act That Makes a Burlesque of Justice.

Grim indeed are the provisions of the anti-automobile bill introduced in the Pennsylvania Legislature by Senator Grim. Under the specious guise of keeping the State highways as "free as practicable from the reckless use of dangerous motorvehicles," it embodies provisions that mark it as the most vicious statute yet proposed in any State.

It fixes the maximum speeds in the cities and country at eight and twelve miles, respectively, institutes licensing and registration bureaus, compels the filing of a $5,000 bond by non-residents wishing to take out licenses, makes the carrying of numbers six inches square compulsory, and places it in the power of the drivers of horses or other animals to stop autoists at their pleasure. The culminating outrage is the imposition of penalties for violation. A fine of not less than $500 and imprisonment for not less than thirty days in jail are obligatory; and the offending automobile is forfeited, its disposition resting with the Court. Informers are rewarded by a payment of $50 of the fine.

The principal provisions of the act follow:

Section 1—Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania that no engine commonly called an automobile or other vehicle, whether propelled by steam, gas or electricity, shall be operated or driven upon any public highway in any city, borough, county or township in this Commonwealth, until the same has been registered by the owner or owners thereof in the Prothonotary's office of one of the cities or counties of this Commonwealth as hereinafter provided.

Section 2—Every applicant for registration shall set forth in writing the name and residence of the applicant, the name and residence of the owner or owners, the name of the manufacturer and the number of the motor-vehicle to be registered.

Section 3—It shall be the duty of the Prothonotary to issue a certificate of registration to the applicant or applicants, for which registration the applicant or applicants shall pay to the Prothonotary at the time of filing the application four dollars

Section 4—Every registration certificate issued must contain the name of the applicant or applicants, the name of the owner or owners, the name of the manufacturer and the manufacturer's number. The registration of such motorvehicle shall not be valid until the certificate so issued is posted in a conspicuous place on the motorvehicle so registered, and the registration number is posted in a conspicuous place on the front and back of the said vehicle, and the registry shall be null and void if the motorvehicle is used or operated upon the public highways as aforesaid when either the certificate or number is removed therefrom.

Section 5—No person shall be allowed to use or operate any such motorvehicle upon any of the public highways aforesaid until he shall have passed a satisfactory examination in the use, operation and construction of the same before the State Board of Highway Commissioners and shall have received a license from the Treasurer of one of the cities or Counties of this Commonwealth, as hereinafter provided.

Section 7—No person or persons shall be allowed to use, operate, or drive any motorvehicle as aforesaid upon any of the public highways of the cities, boroughs, counties or townships of this Commonwealth at a speed greater than eight miles an hour within the corporate limits of any of the cities and boroughs, and twelve miles an hour without the corporate limits of such cities or boroughs.

Section 8—Before such license shall issue the applicant shall take and subscribe an oath before the Prothonotary of the same city or county that he will not use, operate or drive any such motorvehicle upon the public highways aforesaid at a speed greater than eight miles an hour within the corporate limits of the cities and boroughs of the Commonwealth and twelve miles in the counties and townships without said limits. Before any such license shall issue to a non-resident of this Commonwealth the applicant shall, in addition to the other requirements of this act, file his bond in the penal sum of five thousand dollars with sureties to be approved by the Court of Common Pleas of the same county, which bond shall be in the name of the Commonwealth and shall inure to the benefit of all persons damaged in person or property by the use and operation of any motorvehicle while in the possession of the person licensed and for the payment of all fines and costs imposed for the violation of any of the provisions of this act. And successive suits may be brought thereon to the use of all such persons until the amount thereof is exhausted.

Section 9—No license issued as aforesaid shall be valid for a longer period than one year. They may be issued on the first day of January, or at any time thereafter, but shall expire on the thirty-first day of December next ensuing. The annual license fee shall be ten dollars, and shall be paid to the City or County Treasurer, for the benefit of such city or county.

Section 10—Every person using or operating a motorvehicle upon the public highways, as aforesaid, shall have displayed in a conspicuous place on the front and back of such motorvehicle, in large numerals, not less than six inches square, the number under which it is registered. He shall sound a gong or other alarm when approaching a street crossing or road crossing, shall have no right of way or preference as to the use of such street or road, but shall stop the motorvehicle when signalled to do so by the driver of any horse or other animal until the animal or animals have passed in safety.

Section 14—Any owner, lessee, bailor, bailee, operator or user of any motorvehicle as aforesaid, violating any of the provisions of this Act, shall, in addition to his, her or their civil liability, be deemed guilty of a misdemeanor, and upon conviction thereof shall, for each and every offence, be sentenced to pay a fine of not less than five hundred dollars, and to undergo an imprisonment in the county jail for a period not exceeding thirty days; Provided, that any such person or persons, convicted of violating the provisions of either of sections one, five or seven of this Act, the sentence so imposed shall work a forfeiture of the motorvehicle found in the possession of the person so convicted, and the Court shall make much order with reference to the disposition of the same as may seem to it just and proper.

Section 15—Any officer, when making such arrest upon his own motion, and any person giving the information leading to the arrest and conviction of any violator of any of the provisions of this Act, shall be entitled to receive fifty dollars of the fine so imposed, upon conviction.

Section 16—This Act shall not apply to any race course or private road, nor to any passenger railways or steam railroads confined to tracks, nor to steam or other street rollers, nor to any of the motorvehicles which any manufacturer or vender of automobiles may have in stock at his place of business or in his various warehouses.

New Jersey Bill Advanced.

After an unexpected check that sent the cold chills down the backs of those interested in the measure, the New Jersey automobile bill, termed the Scovel bill, has passed the Senate of that State on its second reading. It had already passed the House.

The check referred to came on Thursday of last week. The measure was reported with an amendment that emasculated it. It was the work of Senator Cross, of Elizabeth, and fixed the maximum speed of automobiles in the State at fifteen miles an hour. The bill provided for a speed of twenty miles. The change caused consternation as a matter of course, as it looked as if all the work of autoists had gone for naught.

By Monday, however, Senator Cross had been induced to listen to reason. He withdrew his amendment, and the bill was promptly given a second reading.

In the course of his speech in favor of the bill Senator Hudspeth, of Hudson, said:

"It is almost a perfect bill, and New Jersey will set the pace for fair automobile legislation if it is enacted into law."

Discord Over Florida Races.

There is discord in the camp of the Florida automobile race meet boomers. Late last week it was announced that the races scheduled to be held at Daytona on March 26 were off, positively and for all time. This week the report came from W. J. Morgan, who conceived the idea of the proposed events, that they are still "on," and will positively be run as scheduled. Definite entries from R. E. Olds and other well known autoists were stated to be in hand.

Some light is thrown on the matter by a letter from Secretary F. P. Hoover of the Florida Automobile Association, stating that on March 11 this association voted to withdraw from all connection with the race meet. This withdrawal was due, he said, to the fact that sanction to run the races had not been obtained from the American Automobile Association, although it was supposed that this had been attended to. Hoover added that as they could not hold the races according to the laws of the American Automobile Association it was deemed advisable for the best interests of the Florida Automobile Association to sever all connection with the meet.

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THE CHAUFFEUR SITUATION

The Motor World's Ventilation of Subject Proves Timely and Brings Additional Opinions.

That the Motor World's exhaustive story of the chauffeur situation, published last week, was a revelation to many there is no doubt. Even those in the trade who were familiar with the conditions depicted were pronounced in their expressions regarding the accuracy and timeliness of the article, and of the purposes it would serve.

"The subject needed just such publicity and ventilation as you gave it," said one of the best known of the metropolitan managers, "and if we could get a copy of last week's Motor World in the hands of every man employing a chauffeur it would help mightily in solving at least several phases of the problem."

The publication of the story naturally brought out numerous instances of the cupidity, or worse, of the chauffeur ilk.

"One of the worst cases I know of," remarked a man in position to speak, "concerned an expensive car, owned by a wealthy man who went abroad with his family last summer, leaving his car in charge of his chauffeur, a well paid man. The owner could not have got far outside Sandy Hook before that precious driver began 'hacking it' with that costly rig. He must have turned a good many dollars into his pocket during the several weeks that his employer was absent, but 'slipped up' in rather an odd fashion. One of the last parties to which he rented the car was made up of Tenderloin rounders. They got gloriously drunk, and one of their drunken ideas of fun was to squirt the speaking tube, with which the car was equipped, full of tobacco juice. The chauffeur did not discover it, but the owner found it out on his return, and in a disagreeable manner more easily imagined than described, That chauffeur lost his job, of course."

"It should not be lost sight of that aside from the matter of commissions not a few of the abuses cited are directly chargeable to the owners of the garages," said another man. "It is their business to know or to discover the comings and goings of the cars which they are paid to care for. No car can leave their places without their knowledge during working hours or without the connivance of their night watchmen after hours, and the garage owners or managers who wink at such practices, or who even permit themselves to remain in ignorance of them should be run out of the business. It is their duty to know and to be loyal to the men who enable them to live. There is no doubt at all that some of the night watchmen are in league with the chauffeurs, and it is these so-called watchmen that require watching. I have good reason to believe that one of the most flagrant of the offending places in New York is also one of the most expensive and top-lofty. From all accounts, the chauffeurs and the night watchmen there are hand in glove, and it is not at all uncommon for three or four cars to leave the place at midnight with soubrettes aboard. I have been told, and I believe it, although I cannot vouch for it, that certain chauffeurs have been permitted to strip their employers' cars in the place and then repair to the Hudson County Boulevard, where they have almost weekly engaged in midnight races on that magnificent highway. If a system of espionage or of dropping in at unexpected hours is necessary discover such abuses it should be instituted. It is the one sure way of preventing it."

Chauffeurs to Organize a Club.

The matter of an organization of chauffeurs has taken another turn. The union plan has, as stated last week, fallen through, and in its place there is a proposition to form a club, the object of which is the remedying of some of the abuses complained of.

A meeting has been called to take place this week at the garage of the Mobile Co., at Forty-eighth street and Broadway, this city. Signatures of seventy-five chauffeurs are said to have been secured for the call. It is proposed, in case the organization is effected, to inagurate a registration system, dividing the men into four classes and issuing certificates for each. In the first class will be placed men who have had two or more years experience, in the second those with between one and two years' experience, and the third and fourth classes, those with less than one year's.

Seigman Loses his Suit.

At Trenton, N. J., last week, the Court of Errors and Appeals affirmed a decision of the Court of Chancery in the suit of Richard Seigman against the Electric Vehicle Co. The suit was brought to compel the directors of the company to pay back dividends alleged to have been illegally declared in 1899 and 1900. The suit was dismissed on the grounds that no application had been made to the directors to have them recover the alleged illegal dividends. Of the present directorate of the company of twelve members, there are only five who were directors at the time the alleged illegal dividends were declared. The court therefore holds that application must be made to the directors before any stockholder can institute suit.

Committee on Chauffeurs Named.

The N. A. A. M has, as the Motor World last week intimated would be the case, taken formal action on the chauffeur question. A committee has been appointed to consider the advisability of devising a plan for the schooling or training of men desiring to become chauffeurs, and to receive suggestions on the subject.. L. H. Kittridge, W. D. Gash and G. B. Adams comprise the committee.

On Saturday the last of the English shows opens. It will be held at the Agricultural Hall, London.

RULES FOR WAGON TEST

Classes Arranged and Requirements Outlined—How the Medals Will be Awarded.

The first draft or prospectus of the rules governing the Automobile Club of America's forthcoming commercial vehicle contest has been given out by that organization. Its salient features are, as already announced in these columns, the holding of a two day contest, to take place May 20 and 21, open to all types of self-propelled vehicles, whether of foreign or domestic origin.

Two twenty mile runs each day will be made, starting from the clubhouse, Fifty-eighth street and Fifth avenue, proceeding to the Battery, thence uptown to the northern part of the city and back to the clubhouse, the route being covered twice. The first day's run is to be without voluntary stops; on the second day designated stops are to be made. One stop of not exceeding three hours' duration is allowed electric vehicles during each day's run for recharging batteries. Steam vehicles are permitted a thirty minute stop for water.

As previously stated, the vehicles are divided into three classes—electric, steam and gasolene—with four subdivisions, based on weight. It is stipulated that each vehicle shall carry a dead weight of at least 75 per cent of its own weight, in addition to the driver and an observer, who shall accompany each vehicle. The subdivisions are for vehicles carrying loads of 750, 2,000, 3,500 and 10,000 pounds, and on the second day's run they shall make 100 stops for the first and second classes, and twenty and ten for the third and fourth. Gold, silver and bronze medals are to be awarded to the vehicles in the four classes making the best showing. The basis of award is economy of operation and time consumed in covering the course within the legal limit of eight miles an hour.

Contestants are permitted to carry their loads either in live or dead weight; but must submit their vehicles to the club for weighing, both before and after loading. A record will be kept of the amount of gasolene, electricity, coal, etc., consumed, so that the cost of operation can be ascertained. Ampere-meter and volt-meter readings will be taken one each day, and before and after recharging.

The contest committee announces that a complete set of rules, under which the contest will be run, will be issued later.

Colors for Cup Teams.

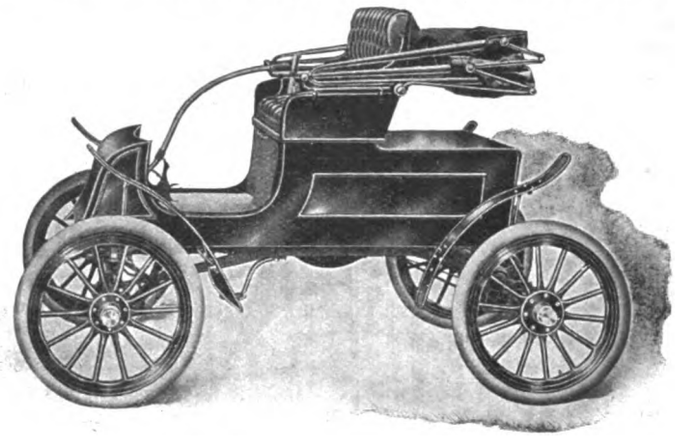
At a meeting of the sport committee of the Automobile Club of France, held last week, on the proposal of the Automobile Club of Great Britain it was resolved to adopt the following distinguishing colors for the Bennett Cup race: Great Britain, emerald green; Germany, white; America, red; France, royal blue.

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Disgracing Pennsylvania.

Even in the business of law manufacture there must be what the vernacular terms "the limit." If the Grim bill, introduced in the Pennsylvania legislature by the "statesman" of that suggestive name, is not "the limit." If the Grim bill, introduced is difficult to conceive to what greater lengths it can be carried, save only by the prohibition of the use of motor cars on the road.

The bill in full is reproduced in another column. It deserves a place in all scrapbooks as a legislative curiosity, as evidence of legislation run stark mad. It is impossible to accept it seriously.

Grim is either a prince of jokers or his head is sadly in need of examination. His bill is a serio-comic effort that would wring tears from the angels. It is also a disgrace to the State of Pennsylvania and to the man or men responsible for it. If by any contretemps it should get beyond a first reading, Justice might well throw her scales into the sewer and don the cap and bells of the buffoon, the eagle might well cease to scream and Uncle Sam exchange the read, white and blue for deepest black and no longer prate of "the home of the free."

If Grim has heirs, the pity is for them. When a few years or a generation hence they look back and view the miserable mess of legislative pottage which the shortsighted and unprogressive "old man" spilled on the family name and on the State of Pennsylvania they may well hang their heads.

Grim would have automobilists make oath that they will not exceed the limits of speed which he sets. Automobilists might have Grim make oath that he is not a fool, and even then we are not certain that they would not have good grounds for perjury proceedings.

Will Spark Plugs be Revolutionized?

That a revolution in spark plugs is probable there is small room for dispute. The discovery of the amazing virtues of the outside gap and visible spark make inevitably for that end.

The "wise men" are telling us that it is really no discovery at all. But the fact remains that none of these wise ones, despite his alleged knowledge, turned it to advantage, although every betterment of existing ignition systems was eagerly sought and earnestly desired. The "outside gap" will stand as a discovery despite fulminations to the contrary.

That it should be applied by means of an extraneous attachment only when a plug had become foul appears illogical. If it is good at any time for any plug it should be good at all times for all plugs, and plugs should be so altered or hereafter so constructed as to integrally incorporate the double-jump feature; extraneous devices should be made unnecessary.

When the only point on which doubt exists is removed, i. e., whether the outside or extra spark does or does not make added or undue drain on the life of the battery, there is no doubt that the future construction of plugs will be quickly settled.

If it is proved that undue drain exists the attachable "interrupters" or "intensifiers" will prevail, and for use when a plug grows wrong will become not less valuable than a tire repair tool or tool of any kind. If it is found that the extra and hotter spark affects the life of the batteries little or not at all, then there is no reason why the necessary "interruption" should not be made a part of the plug itself.

The value of the discovery appears not to have been fully realized by the rank and file. But that does not diminish its importance. The means that not only enables a sooted or oil covered plug to spark perfectly—and we have known a cracked plug also to be made work as well—without removing it from the motor, but that affords visible proof that batteries and coil are "delivering the goods," is no small improvement and perfection of the weakest link in the, so to speak, gasolene chain—the ignition system.

Classes in the Commercial Contest.

America's first commercial vehicle contest will be an event vastly different from the first organized contest in which the pleasure vehicle participated. Many changes have taken place in the year and a half that has elapsed since the Automobile Club of America conducted its Buffalo function; and a deal has been learned about planning and carrying through successfully such tests as those under notice.

Consequently the skeleton rules given forth by the contest committee of the A. C. A. appear to answer the purpose admirably. Elaboration will probably result in smoothing out any rough places and remove such discrepancies or misunderstandings as may exist.

For example, it is provided that steam vehicles will be "allowed thirty minutes stop for water." Whether this is restricted to one stop as well as to thirty minutes is not clear. Again, no provision is made for hybrids—vehicles using both explosive engines and electric motors. They will probably be looked after. Just what constitutes an involuntary stop, and how much allowance should be made for traffic congestions resulting in stops and delays are also matters requiring careful consideration. The same may be said of such other matters as repairs—by whom and where they shall be made— and tires—whether stops due to them shall be penalized. These are details, however, and will unquestionably come in for careful attention.

The classification of the cars at once attracts attention, and even calls for explanation. On the face of it, the "dead load" must be exactly 750, 2,000, 3,500 and 10,000 pounds. The basis of the division is found in the note that "each vehicle must carry a dead load of at least 75 per cent of its own

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weight in addition to the driver and observer." Now, let us see how that works out: We will suppose that a light delivery wagon weighs 1,100 pounds—or any number over 1,000. As it must carry at least 75 per cent of its own weight, or more than 750 pounds, it is ineligible to the first, or 750 pound, class. It must, therefore, go into the second class and carry 2,000 pounds, or nearly double its own weight.

The hardship of this will readily be seen. Furthermore, there are very few even of the light delivery wagons that will not scale more than 1,000 pounds. As a result, the first class is almost wiped out. An even greater injustice is done in the case of a vehicle weighing, say, 4,800 pounds. With a 75 per cent load it must carry 3,600 pounds, or too much for the third, or 3,500 pound, class. It would, therefore, go to the next class and carry 10,000 pounds, or more than twice its own weight.

The matter of classification is plainly one that is in need either of revision or elucidation.

Tire Improvement.

We need only go back a couple of years to reach the time when pneumatic tires were very far from being satisfactory to automobile users. To institute a comparison between then and now is all that is necessary to perceive what a great change has come about; and this without overlooking the fact that the air tire is still far from being perfect.

In bringing about this change two factors have been at work. The first is the immense improvement that has taken place in the tires themselves. Experience—some of it very costly—has shown the makers the defects of their former product, as well as enabled them to correct them. Better fabric, better methods of rubber compounding, coupled with improved designing, have combined to produce tires that last longer, wear longer and stand up better under hard usage than anything that was formerly turned out of the rubber factories.

Side by side with this movement has gone another of scarcely less importance.

The tire user—and under this term is comprehended the maker as well as the purchaser of the complete automobile—has learned his lesson, at least in part. He is now willing to leave something to the tire maker's judgment. Instead of ordering tires of a certain size at a specified price, and then fitting them to suit himself, he asks the advice—or takes it, which amounts to the same thing—of the tire maker, and is guided by his experience. Consequently he does not use 2½-inch tires on touring cars, or expect thick fabric, puncture resisting tires to prove satisfactory on light runabouts.

Consequently it is no exaggeration to say that pneumatic tires now occupy an unassailable position in the automobile trade. No one seeks to displace them—at least on pleasure vehicles—and for a very simple reason: they have no object in doing so, being satisfied with them as they are.

The Cup Race in Ireland.

Apparently the Bennett Cup race on Irish soil is as good as an accomplished fact. The bill to legalize it has passed a second reading in the British House of Lords, and the making of preparations for holding it is being gone ahead with. Humanly speaking, therefore, no doubt whatever exists about it.

It is just possible that lack of familiarity with automobile racing may cause some accidents to result. The conducting club suffers in some degree on this account, while the Irish populace, unlike the French, are profoundly ignorant of the terrible possibilities inherent in the speed monsters that will invade the Emerald Isle in July, and it will be no easy matter to keep their curiosity in check. Still, the effort will be made, and the thorough manner in which it is being gone about makes it reasonable to suppose that it will be crowned with success.

On the day of the race the course will be thoroughly patrolled and guarded. It is even proposed to call in the military to aid the Automobile Club of Great Britain and Ireland and its deputies in preserving a clear course; but this is a rather remote contingency.

A strict interdict has been laid on the reckless and indiscriminate use of the roads for practice prior to the race. When we recall that the indulgence in such practices resulted in the prohibition by the Italian authorities of the road race from Nice last year, the wisdom of such a ban will be readily understood.

This year, for the first time, the Bennett Cup race will be an event of the first magnitude; one thoroughly in keeping with the conceptions of the donor of the cup. Prior to the 1902 race the event was of secondary importance. Even last year it was dwarfed by comparison with the Paris-Vienna contest, being run in conjunction with it, and being provocative of interest chiefly because the cup was, for the first time, wrested from the French club which had held it from the beginning.

The 1903 race marks a new era. The race is to be run alone, over a course especially selected and used only for this race. The contestants, officials and visiting spectators will go to Ireland to see this race, and at its conclusion will disperse, their labor or pleasure at an end. And for the first time also the competing teams will be representative and "classy." France, Germany and the United States will all send teams to wrest from Great Britain the trophy emblematic of speed supremacy on the road which the latter will then have held for a year. The cars will embody the latest and most approved principles of construction, power and speed being the prime considerations; and the men who will drive them are the recognized giants of the automobile racing world. It will be a veritable battle of Titans, one well worth going a long way to see.

In these many proposed licensing schemes it sounds pretty to say that a man's license shall be taken away or suspended under certain conditions, but we are impressed with the idea that it is more sound than substance. Arrests may be made as often as occasion requires, but to deny the public highways to any citizen using a legitimate vehicle savors strongly of a flagrantly unconstitutional blow at personal liberty.

It is evident that the space filling fakir has fairly inaugurated his spring campaign. By "landing" several big New York dailies with such palpable fakes as were the "Woman's Automobile Club" and the "New York-Chicago race" he has certainly made a good beginning.

The Subject of Rear Lights.

Editor The Motor World: Your article in edition of the 12th inst., relating to "Road Rules," in one point hits the nail on the head. Every man who runs an auto at night, and every club, should undertake to bring all their influence to bear on our lawmakers to the effect that every vehicle on the road at night should carry two white lights facing front and at least one red light facing to the rear. What is sauce for the automobile is sauce for every other vehicle.

I believe this to be one of the most important promoters of safety to all who may ride at night. The interests of those who ride are mutual, and will be best served when all show a liberal spirit, governed by old fashioned common sense—P. M. BERRY, New York.

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BOSTON DOES ITSELF PROUD

Its Show a Model of its Kind and Proves a Huge Success—Several new Cars Shown—"Mottoes" on the Wall.

Boston, Mass., March 17.—This classic town is having an automobile show that is almost a classic of itself, and it is being held in a classic building, the new Symphony Music Hall, at the corner of Huntington and Massachusetts avenues. It is a sufficient and satisfying show. It is so spectacularly beautiful and so nearly complete that it seems a slight to term it a local show, yet such it distinctively is, for the names on the signs about the hall are almost without exception those of local dealers, although most all the representative makes of domestic cars are on hand, and a couple of imported varieties.

The promoters, the Boston Automobile Dealers' Association, have reason to be proud of their show, and Bostonians well can be content with the local exhibit as a substitute for a trip to the national display at New York. It would seem also that a great many were of this mind, for the show is proving itself a fine success in point of attendance.

It was 8 o'clock on Monday night when the show was formally opened, and at that hour, even in the self-contained, calm minded Boston, there was a crowd of more than one hundred waiting for the doors to be opened. Within half an hour the place was crowded. The aisles of the main hall are wider than were those at the Madison Square Garden show, and, the spaces of the exhibitors not being divided one from another by railings, offer opportunity for a more general distribution of the crowd, yet at 9 o'clock on the opening night it was difficult to move about. The place was uncomfortably warm, and for the working men of the press to get about and get information from exhibitors was impracticable. They, were all too busy talking to prospective customers. Some of them were customers, for business began "right off the reel," and there is every promise of a week of highly gratifying sales. There is nothing mean about this show. It is handsome in every sense of the word. The managers and the press agent deserve great credit. If it be that the house was papered on the first night it was done with rare discrimination and tact, for the crowd present represented considerable of the smart set of the city. Handsome theatre waists and opera cloaks on the women and evening dress for the men were so much in evidence as to be almost the rule. By an actual tally made all but two of the fifty-four men in charge of exhibits were in evening clothes.

There is something remarkable about the prettiness of the show when it is analyzed, for there is little or nothing of decoration. It is artistic, that is all. The building itself is a setting that would make any imitation seem to be a gem. The main hall seems to have the two great galleries for cornices, while the grand alcove of the stage, with the gilded pipes of massive organ at the back, form a picture of architectural beauty of themselves. Above the second balcony from niches that alternate with arched panel spaces there look down upon the scene gigantean replicas of classic statuary. All the patrons of art and music apothesised by the Greeks are here, staring, stoney-eyed upon the most modern chariot of man. At the rear end of the hall in three panels flanked by Dian and Demosthenes are inscriptions in latter day newspaper English, designed to fit the occasion. These are:

"Sanitary laws do not permit the keeping of cows, sheep or pigs within the city limits. This will soon apply to horses also. Keep the animals in the country, where they belong."

"In ten years there will not be a horse drawn vehicle in Paris.—(Extract from a recent speech made by Baron de Rothschild."

"An automobile going twenty miles an hour is safer than a horse walking. The auto can't run away."

There are no elaborately decorated spaces. The signs above the spaces are on a uniform level, and in a harmonious tone. They are nearly all painted in gold yellow on an olive hued background. The flooring at every space is covered with dark green matting. The only electric signs are those over the stage—De Dion, Toledo and Waverly, besides the Darracq sign in the tuning room.

The officers of the promoting Association are: Kenneth A. Skinner, president; W. E. Eldridge, vice president; W. I. Campbell, secretary; A. P. Underhill, treasurer.

Although no machines were admitted to the building after 12 o'clock noon on Monday it is noteworthy that everything was in apple pie order at night, and that the show had a completeness that is unusual for first nights. Only a few cars remained to be installed on the second day, and most of these got in early this forenoon. The impending strike on the New York and New Haven Railroad has deterred some from shipping cars because the railroad refuses to guarantee to delivery. In one case it was decided to send up a car for demonstration work—a Locomobile—from the factory at Bridgeport by road, and it is now on its way. The opening attendance was generally placed at 3,000 or more, and 2,500 is a conservative estimate.

While the Salem Cadet Band played popular and classic music inside a hall with such remarkable acoustic properties that the orchestra, although a good one, made a din, there was outside from a dozen to twenty demonstarating cars humming a lively commercial tune of their own. The sign of business was that the demonstrating cars had plenty to do. In fact, the scenes outside the building are, size considered, comparatively as lively as those outside of the national show. From to-day on till Saturday night the show will be opened from 2 to 10 p. m.

It being an exhibition for the people and not for agents, the hall is almost devoid of human life in the forenoon and the morning of the second day there came a chance to look around and size up things.

A tally of the spaces made by the Motor World man to-day showed the following result: There are 55 exhibitors, of whom 35 are showing motorvehicles. Of these 35, two show motorbicycles and no cars and one of these hase both the motor and motorless style of bicycle. The 35 exhibitors have on view a total of 97 vehicles, which includes 10 motorbicycles. In motive power the 97 vehicles are divided as follows: Gasolene, 70; electric, 10; steam, 17. In variety of make, the 97 vehicles are of 53 different kinds. In style of carriage they are divided as follows: Runabouts, 37; tonneau, 35 chassis, 6; broughams, etc., 7; bicycles, 10; delivery wagons, 2.

Here is a summary of the exhibits as they are distributed in the building:

STAGE.

K. A. Skinner, Boston.—Two American made, 5 horsepower De Dion-Bouton motorettes, one French 6 horsepower voiturette, with cylinder under a hood in front, one 5 horsepower French rockaway, one 5 horsepower brougham and one French 9 horsepower tonneau.

W. E. Eldridge, Boston.—Two Toledo tonneau cars, one Waverly electric tonneau (a new model), one Cadillac tonneau, one Waverley electric delivery wagon, and three Waverley electric runabouts.

MAIN HALL.

Coates Manufacturing Co., Boston.—One Commonwealth runabout.

A. J. Coburn & Co., Boston.—Two Crestmobile runabouts.

A. R. Bangs, Boston.—One Franklin four-cylinder runabout, one General tonneau.

Automobile Headquarters, Boston.—One Pierce tonneau, one Pierce stanhope.

Harry Fosdick, Boston.—One Winton touring car, one Winton chassis.

Waltham Manufacturing Co., Waltham.—One Orient buckboard.

F. J. Read, Boston.—One Yale tonneau.

Pope-Robinson Co., Hyde Park, Mass.—One Pope-Robinson tonneau.

Upton Machine Co., New oYrk City.—One Upton tonneau.

A. E. Morrison, Boston.—One Peerless tonneau, one Peerless chassis, one Baker electric runabout.

Locomobile Co., Bridgeport.—One Locomobile steam surrey, one Locomobile gasoline chassis, two steam runabouts.

Stanley Motor Carriage Co., Newton, Mass.—Two steam runabouts, one steam surrey.

H. B. Shattuck & Son, Boston.—One Autocar tonneau, one autocar chassis, two Packard tonneau, one Searchmont tonneau, one Olds runabout, one Olds coupe, one Olds chassis.

Drisko & Snow, Boston.—One Reber tonneau, one American runabout.

Columbus Automobile Exchange, Boston.—One Rambler runabout.

Bates Bros., Boston.—One Mobile runabout, one Mobile surrey, one Mobile delivery wagon, one Conrad tonneau, one Conrad runabout, one St. Louis runabout, one Kensington tonneau, one Thomas tonneau, one Auto-bimotor bicycle.

Alvan T. Fuller, Boston.—Two Northern runabouts, one Northern chassis, one Orient motorbicycle.

H. E. Marvel, Boston.—One Columbia elec-

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tric surrey, one Columbia electric victoria, one Columbia electric cabriolet, one Columbia electric coupe (operated from inside).

Crompton Motor Carriage Works, Worcester, Mass.—One Crompton steam cabriolet.

F. E. Randall, Boston.—Two Stevens-Duryea runabouts.

Barber Manufacturing Co., Somerville, Mas., and Eclipse Automobile Co., Somerville.—Eclipse steam runabout fitted with Barber kerosene burner.

F. E. Randall.—Four Indian motor bicycles.

Reed-Underhill Co., Boston.--One Knox runabout.

Diamond Rubber Co., Akron, O.—Diamond single tube and detachable tires.

Imperial Rubber Co., Franklin, Mass.—Tires with core of rope.

VESTIBULE.

American Darracq Co., F. A. La Roche, New York.—Two Darracq tonneaus, one Darracq chassis, two Cleveland tonneaus.

Waltham Automobile Co., Waltham, Mass.—One Waltham steam runabout, one steam surrey.

Electric Storage Battery Co., Philadelphia.—Exide batteries.

Charles E. Whitten, Lynn, Mass.—Two Stanley runabouts, one Rambler runbout, one White steam touring car, one steam stanhope.

E. H. Corson, Boston.—One Corson motor tandem, two Mitchell motorbicycles, one Merkel motorbicycle.

W. E. Eldridge, Boston.—One Columbia motorbicycle, seven pedal driven bicycles.

Tennant Auto Tire Co., Springfield, O.—Tennant puncture proof tires.

Waltham Manufacturing Co., Waltham, Mass.—One Orient runabout.

R. F. Kelsey, Boston, Mass.—One Racine motor launch.

Twentieth Century Manufcturing Co., New York.—Twentieth Century lamps.

Haverhill Fire Appliance Co.—"Eclipse" dry dust fire extinguishers.

Standard Anti-Friction Equipment Co., New York.—Beasley tires.

Beau-Chamberlain Manufacturing Co., Boston.—Hudson bicycles.

NORTH CORRIDOR.

H. H. Buffum Co., Abington, Mass.—One Buffum tonneau.

A. Shuman & Co., Boston.—Automobile clothing.

Automotor Co., Springfield, Mass.—One Automotor tonneau.

Lozier Motor Co., Plattsburg, N. Y.—Four Lozier motors for launches.

SOUTH CORRIDOR.

E. N. Bliss, Attleboro, Mass.—Jones speedometers, batteries and supplies.

The Frictionless Roller Bearing Co., Boston.—Bearings.

Westinghouse Electric and Manufacturing Co., Pittsburg, Pa.—Motors and equipments.

American Coil Co., West Somerville, Mass.—Induction coils and spark plugs.

Edwin L. Smith, Boston.—I. M. C. steering check.

Renault Car Co., Boston.—Two Renault tonneaus.

Jones-Corbin Co., Philadelphia.--One Jones-Corbin runabout.

TUNING ROOM.

Keasby-Mattison Co.—Asbestos automobile houses.

As will be seen from the summary W. E. Eldridge and Kenneth Skinner have the whole stage, and with their three electric signs these are the most conspicuous displays in the building. In point of number and variety of machines, though, the Bates Bros'. exhibit with nine vehicles of five different makes is the largest exhibit.

The hall lights up so brilliantly that there is no need for decoration at the spaces, and the only stand where any attempt at such a thing has been made is that of Drisko & Snow, where three tubbed palm plants are. One more electric sign arrived on the second day. It was that of the Oldsmobile Co., showing an Olds runabout outlined by varicolored incandescent lamps. There are a few new and some semi-new things at the show, besides a number of exhibits that are novel in Boston. The semi-new things are those that have been heard about and pictured, or perhaps seen in private, but never at a show, such as the De Dion voiturette, of six horsepower, with a wheel steering gear and a single cylinder engine under a hood in front, which Kenneth Skinner calls "Le Populaire," the Waverley electric tonneau, the Buffum touring car, the Columbia 1903 motor bicycle, the Corson motor tandem, the Eclipse steam car with kerosene burner, etc.

A real new vehicle here shown for the first time is the Crompton steam cabriolet. This is striking a production.

The Crompton people have been at work on the car for three years, and they have certainly turned out something unusual and engaging. To begin with, it is a heavy carriage with beautifully carved lines somewhat suggestive of the sweep of the Duryea car from the seat to the front. It stands upon large sized wooden wheels and has a capacious seat equal to accommodating three persons. To the eye it is a luxurious and simple looking vehicle. Two little gauge clocks on the dashboard, a brake pedal and the steering wheel are the mechanism there is in evidence, for there is no water glass and the exhaust pipe is under the body of the car.

The boilers and the engine are set compactly in a rear apartment. The boilers are distinctly novel and not easily described. There are two and at the same time twenty-four boilers. The two main boiler divisions are on each side and each of them is made up of twelve smaller distinct tubular boilers with nineteen fire tubes apiece, each set of twelve boilers being set under an individualizing top plate. The engine is located between the two boiler divisions. It is a four cylinder, sixteen horsepower rotary valve engine, geared direct to the rear axle by means of a vertical shaft and bevel gears at the transmission end. The differential gears are directly inside the beveled transmission gear on the axle. Another feature is that of hub brakes on the rear wheels. The virtue claimed for this construction is that of getting a great deal of heating surface and carrying a quantity of dry or superheated steam. The water gauge is dispensed with by using an automatic pump ingenious, yet simple, that is confidently relied upon to keep the water in the boilers constantly at the same level. This and an air pressure pump are claimed to have been so thoroughly tested that no hand pumps or gauges are necessary. There are two gasolene tanks in front of the dashboard, one holding nine gallons, the other six gallons. The water tank with a capacity of 40 gallons, is of corrugated copper and located under the seat. The engine is said to develop sixteen horsepower and a distance of fifty miles is claimed to be possible without stopping for water. The weight of the vehicle is stated as "in the neighborhood of 2,000 pounds."

The 1,600-pound Reber car, made at the old Reading factory, is a substantial, practical looking vehicle with a well constructed two-cylinder engine of twelve horsepower, a roomy tonneau and wide door.

The De Dion voiturette is the new type that has proved so popular in France at $7 00 that the Olds Company recognize it as their only rival. Here it is listed at $1,200, but it is a handsome, serviceable looking machine that impresses one as being worth the money.

The Waverley tonneau is as stylish a looking vehicle as one would care to find. It has graceful lines throughout, is roomy and luxuriously upholstered. The battery, composed of forty Exide cells is swung under the center. The car weighs about 2,500 pounds, will carry six persons, run forty miles on a charge, and yet it sells at $1,800.

A new thing in the sundry line is "Ideal Roller Bearing." The construction is not shown, but a wheel that runs "sweetly" is kept turning by means of a small electric motor.

Another new thing shown here is the Saylor Core Tire. The tire looks like pneumatic stuffed with cork or pressed fibre, but it is moulded about a core of rope. Several patterns are designed for making, one of them having a small core that does not fill the interior, but leaves a pneumatic chamber in the upper part of the tire in a way similar to the Munger tire.

Tires and puncture prevention devices have almost a monopoly of the side show features at this exhibition. A puncture preventer shown consists of a piece of metal, somewhat like a brake speen, that flaps lightly against the surface of the tire, being pendant from a rigid arm that is fastened to the side of the body of the car. The upper edge of this spoon piece is cut with saw-like teeth and as it is demonstrated at the E. N. Bliss stand, one can watch it pull tacks from a revolving Goodrich tire.

The Diamond tires, shown at a space in the main hall near the vestibule, are the only ones representative of the big tire makers. Wm. T. Halfer, the Boston manager, says that the remarkable record of the Diamond detachable is being improved. He has caused fifteen sets of them to be specified on cars ordered since Monday night.

Only a few of the exhibitions are giving any demonstrations. Gasolene is not allowed to be kept in the building, and the Oldsmobile is the only engine being run by an electric motor. A man is kept busy at the Shattuck space showing Olds chassis with its sectionally cut cylinder, explaining the parts and demonstrating the simplicity of the speed changing and reversing device.

The crowd on the second night was not of the dimensions of that on the opening night, but the hall was well filled, and the social character of the attendance was well maintained.

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The Metropolitan Salesrooms and Garages—II.

It is quite natural to find that the finest automobile stations in New York City are numbered among those recently established. Although it is not one of the very latest places to be opened and is not so commodious as several others yet to be exploited in this series, the establishment of Banker Brothers, at 141-143 West Thirty-eighth street, is undeniably the handsomest and showiest combination of sales and storerooms in the city at the present time.

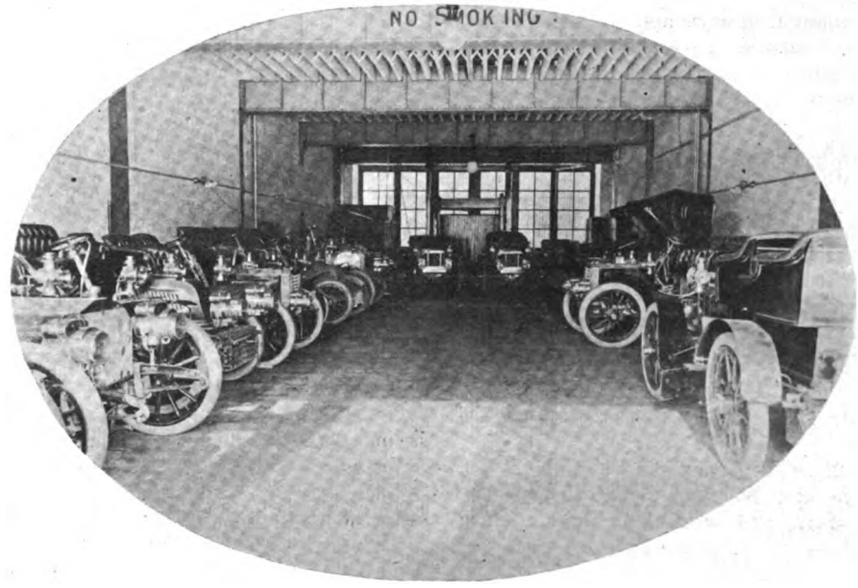


A magnificent expanse of plate glass, behind which can be caught glimpses of new Peerless touring cars and other vehicles, set off by tubbed palms, attracts the eyes of passersby on Broadway in the day time, while at night the whole place is resplendent in a blaze of electric lights. The edges of the windows are completely studded with incandescent lamps, to the total number of 159, and there is besides a big arc light overhanging the sidewalk. No pedestrian travelling along Broadway can fail to be attracted by the brilliant display that this place makes at night. It has a front that commands attention. The interior is quite in keeping with the outward magnificence. The fittings and furnishings are all new, thorough and arranged with an eye to convenience and style. The furnishings are handsome and the decorative effects in the way of palms and pictures bespeak both enterprise and good taste. There is good excuse for Banker Brothers to style their establishment an "Automobile Palace," and the New York manager, C. G. Wridgway, combines the faculties of being able to keep up the stylish tone and beauty of the place and yet make it a very busy workaday garage.

The building is two stories in height, with a frontage of 40 feet and a depth of 100 feet. About forty cars can be accommodated on each floor. Peerless, Waverly, Pierce, St. Louis and Century are the lines handled, and in the hands of Manager Wridgway they are all selling well. The demand for the Peerless cars is already threatening the supply. The firm has contracted for seventy Peerless cars, to be delivered by May.

Both renting and storing are done at the "Palace," and there is no hour of the night when the lights are not burning and men on hand to respond to customers. There is a handsome waiting room for ladies, a suite of fine offices and a stock room on the second floor, which resembles a conservatory because of the entire front and rear being of glass, a big, broad gabled skylight extending the length of the roof and of the floor, being set off with rugs and palm trees.

The stock room is laid out with the systematic thoroughness one might expect in a place so well appointed. There are bins, large and small, for parts of every description and almost every make of car, including some of foreign make. The repairing is not done at this station, however, but at the branch store, at 50 West Forty-third street, where also the overflow of storage is cared for, and by the use of telephone the



THE GROUND FLOOR, LOOKING FROM THE ENTRANCE.

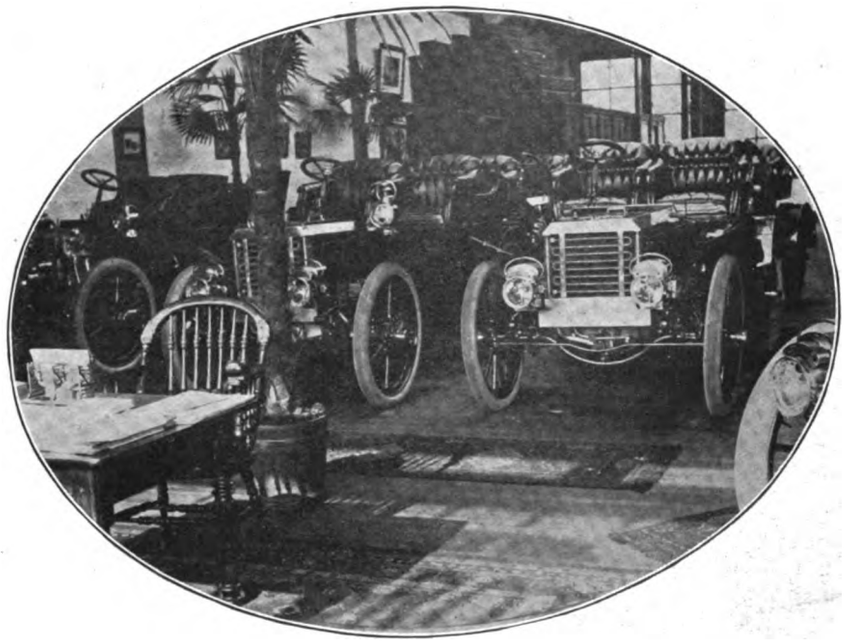
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cars are as promptly available as if all in one place.

There is a fine charging plant on the ground floor, and an elevator, large enough to accommodate any touring car and capable of carrying 4,000 pounds, runs from the cellar to the roof. This lift, the charging plant and the electric lights are all run by a thoroughly equipped plant in the cellar, of which a 26 horse-power Foos engine is the base of power. Besides the 159 incandescents and the arc light outside, there are sixty incandescent lamps and seven arc lights inside, but all are run by the plant owned by the firm.

About thirty men are employed about the place. There are constantly from forty to eighty cars on hand, and there is always a busy stir on the main floor. Manager Wridgway is an automobilist of wide experience, who is equally at home conversing with a customer of the gentler sex in French or plunging into the bowels of a car with tools and oil can in hand, for he is a thorough mechanic and, having lived in Paris, speaks the Gallic tongue like a native.

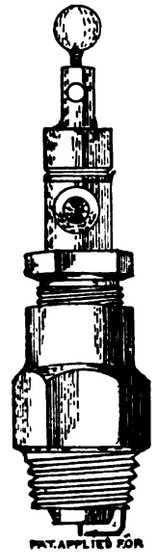
In all, the "Automobile Palace," as conducted, is an establishment that does credit not only to New York, but to the whole industry.



THE BE-PALMED SECOND FLOOR

Here's the Double-Jump Spark Plug.

If by the use of an attachment providing an interruption of the circuit and a consequent external gap to be jumped by the spark, a fouled or disabled plug can be made to render perfect service, that the attachment would be dispensed with and the interruption be made an integral part of the plug itself, doing duty at all times, has seemed both logical and inevitable.



A plug incorporating the very idea has made its appearance, and was placed on the market early this week by the National Automobile Supply Co., No. 717 Nineteenth street, N. W., Washington, D. C. It is shown by the accompanying illustration. The plug does not differ from the usual save in the interrupter midway in the porcelain shank, the two points forming the gap being clearly shown. The Washington originators claim to have tested the plug in the most trying stress of actual use on the road, and with unfailing good results. Aside from rendering it possible to observe that battery and coil are doing their work, they state that it has defied all accumulations of soot, and that the increased intensity of the spark has fired mixtures which the single-jump plug has failed to ignite.

Recent Incorporations.

Buffalo, N. Y.—Morlock Automobile Mfg. Co., with $50,000 capital—Directors—J. F. Morlock, H. J. Wagner and J. L. McGrane.

New York, N. Y.—Manhattan Motor & Power Co., with $25,000 capital. Directors—J. N. Stout, G. W. Grossman and Frederick P. Schenck.

Tappan, N. Y.—Empire Automobile Photo Co., with $20,000 capital. Directors—R. W. Albert, C. H. Pennoyer and W. G. Bowdoin, of Brooklyn.

Groton, Conn.—The Cruikshank Motor Co., with $2,400 capital. Officers—D. B. Blossom, president anad treasurer; George W. Cruikshank, vice-president, and Arthur B. Lee, secretary.

Fond du Lac, Wis.—The Cleaver Motor & Vehicle Co., with $20,000 capital, to manufacture automobiles. The officers are F. C. Cleaver, president; T. H. O'Brien, vice-president; G. W. Watson, secretary; G. A. Knapp, treasurer, and J. A. Chapman, of Milwaukee, superintendent.

Chicago, Ill.—The Merchants' Auto Transfer Co., with $1,000,000 capital; to transfer freight in Chicago from one depot to another. The officers are: President, Josiah Cratty; vice-president, Charles L. Lindquist; secretary, W. S. Williams, and treasurer, Parker H. Sercomb.

Stole a Tonneau Car.

Quick work was made of the recovery of a stolen automobile last week. The garage of S. B. Bowman, at No. 52 West Forty-third street, this city, was broken into and a Thomas tonneau car spirited away. This was discovered at 8 o'clock on Friday morning. The police were notified, and in the afternoon word was received by Captain Lantry that a machine answering the description of the stolen one had been found in Yonkers. P. A. Hagel, manager of the garage, went there with Mr. Bowman and identified the machine. Henry Fitzgerald and three other young men had been arrested and held. They had been attracting attention by racing through the streets and had been enjoying themselves on the proceeds of the sale of the lamps from the auto, which a livery stable keeper is said to have purchased from them for $10. As the New York police did not have any warrant, the prisoners were left at Yonkers.

Motor Cars Instead of Trolleys.

A most ambitious plan is said to be under consideration by a number of Cincinnati, Ohio, business men. It is to secure about five hundred auto cars and establish regular routes from the heart of the city to the suburbs. A fare of five cents a passenger would be charged for the haul, and the promoters say that with double-decked 'buses the service will be equal to that of a street car line. Such 'buses, they also claim, could be operated at a minimum cost, and they would greatly relieve the congestion in public transportation.

An automobile stage line has been projected to run between Babylon, Bayshore, Islip, Sayville and Patchogue on the south shore of Long Island, a distance of about twenty miles. It is said that a proposed trolley line will be abandoned in consequence.

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BAY STATE "ANTIS" HEARD

But They Trot out But one New Argument—Motorists Make Strong Retort.

One distinctly new argument in favor of automobile speed restriction was brought forth in Boston on Monday, when the Massachusetts legislative committee on roads and bridges gave a hearing on the automobile bills now before it. That eminent Bostonian, Moorefield Story, denied the expediency of permitting a greater speed in the country than in the city. "In the city," he said, "there are sidewalks to which we can escape." In the country apparently there is no way of escaping from the automobile juggernaut.

Eight bills have been presented, but at the hearing only one of them was discussed. It was introduced by Roland W. Boyden as a substitute for a bill of Henry L. Higginson and others. It provides that all automobiles shall be registered and nnmbered upon each side and back with Roman letters at least four inches long; that all operators shall be licensed, and that machines shall be provided with lamps, brakes, etc., and that the penalty for infraction of these regulations, or of the law relating to speed, shall be a fine or imprisonment, or both, or the revocation of the operator's license for a year.

In addition to a number of laymen, an imposing array of legal talent was present to argue for and against the bill, and trained its oral artillery on the listening legislators. One side protested against any increase in the present maximum speed of fifteen miles an hour uniform throughout the State; and it was even urged that each town be given the privilege of determining this speed. The other side urged an increase to twenty miles, and protested against legislation inimical to the automobile and certain to check its progress.

F. E. Stanley, of Newton, spoke against the Boyden bill and hit straight from the shoulder. He said the rate of ten miles an hour for a horse is fixed not from the standpoint of safety, but on the capacity of the horse. It is just as safe to drive an automobile twenty miles an hour as to drive a horse ten miles an hour.

"Horses," he said, "are becoming accustomed to the automobile. You are legislating for the future, and as an automobile manufacturer I want to know what the future of the industry is to be. Don't impose restrictions and expensive requirements, because if you do you are striking at an industry that is going to be important.

"I want to see the time when every laboring man, earning $2.50 or $3 a day, can own an automobile. That would mean clean streets, for 99 per cent of the filth on our streets comes from the horse. The street commissioner of New York owns an automobile, and frequently exceeds 20 miles an hour. I don't object to the rate being placed at twenty miles, for as soon as the horse disappears there will be so many automobiles it will not be safe to go any faster than that."

Fred Tudor, representing the New England Automobile Association, said the present law was satisfactory to that association, except the speed limit of fifteen miles, which was too low. The association sent out circulars to be signed, saying the speed limit ought to be raised to twenty miles in the country and twelve miles in the city, or over. They received 1,421 affirmative replies. They also sent out circulars to 2,500 physicians, and 334 sent favorable replies and sixteen that were not altogether in accord. An automobile, he contended, is far more controllable than a nervous horse.

"The horse," he continued, "is absolutely going out of use as a necessary means of locomotion, and those familiar with the matter say that in New York in ten years a horse will not be allowed upon the streets unless by payment of a tax. The cost of maintenance of the streets anad highways is largely increased by the use of horses."

Mr. Tudor believed there ought to be a State law fixing speed. He would not leave it entirely to local option.

"These are not the vehicles of the rich man alone," said C. F. Choate, jr., for the New England Association. "Twenty-five per cent of the automobiles in use in Massachusetts are used by doctors, because they have been found more efficient than the horse.

Old Arguments Against Railroads.

Among the many absurd bills introduced at Madison this session is one to not only license automobiles, but to compel every user thereof to stop at the bidding of every farmer or user of a carriage driven by horses, attaching a penalty to the non-compliance of such a request. This reminds one of the difficulties encountered by the celebrated George Stephenson, the father of railways, in getting a charter for the first line ever constructed, observes the Eau Claire (Wis.) Leader.

The members threw every possible obstacle in his way and propounded all sorts of ridiculous questions. The locomotives would drive horses insane. Cattle in the fields through which the rail went would be so scared that instead of fattening they would actually lose flesh. Hundreds of post boys, coachmen and hostlers would be thrown out of employment, and similar absurdities. The bill came very near being defeated, which would have put back the clock of the world one hundred years. It is to be hoped that a State so progressive as Wisconsin will not stultify itself by taking a retrogade step and passing this bill. The same objections that are now being urged against the automobile were, it will be remembered, urged against the electric street railways in every city in the State. If the world is really turning round, all mankind together will not be able to keep it from turning, or to keep themselves from turning with it.

AMENDING NEW YORK LAW

Long Island "Protectors" get Their Bill Introduced—Full of "Protective" Provisions.

Another Doughty automobile bill was introduced in the Assembly of this State last week, together with a similar measure by Senator Bailey in the Senate. It is received with mixed feelings by autoists. An improvement on the vicious Cocks law it certainly is, as far as speed regulations are concerned, but it is far from being an equitable or even a reasonable measure. Furthermore, it is saddled with a licensing system, and on that account also objectionable.

Townsend S. Scudder, counsel for the association formed by residents of Long Island to regulate the speed of automobiles, prepared the bill. It provides that trustees of incorporated villages and the highway commissioners of towns may adopt ordinances not inconsistent with the limitations prescribed in the bill, regulating the speed of automobiles. When local ordinances are adopted signposts must be erected beside roads with the inscription, "Slow down to —— miles," in accordance with the local regulations.

In general, the bill provides that no automobile shall pass a team or a pedestrian at a greater rate of speed than eight miles an hour. In passing schoolhouses, between 8 o'clock in the morning and 4 o'clock in the afternoon, or churches on Sunday, the speed must not be greater than ten miles an hour. In crossing bridges or causeways, where the roadway is less than twenty feet wide, the speed limit is four miles an hour, and within one mile of a postoffice it is eight miles an hour.

Owners, within thirty days, are required to register their names, the name of the maker of each automobile and its number with the Secretary of State and obtain a certificate from him. Automobiles must have the initials of their owners and the number of the license in black letters on a white ground. The letters and figures must be three and one-half inches high. When stopped on signal, the automobile must not only remain stationary, but must be kept as noiseless as possible.

Drivers of all automobiles capable of developing more than 10 horsepower must have licenses from the State. The State Engineer is authorized to appoint a chauffeur examiner to examine chauffeurs, issue licenses at $5 each, and to revoke them for cause. Holders of licenses must show them to any peace officer.

Penalties for violation of the act are as follows: For the first offence, suspension for from two weeks to one month; for the second offence, suspension for from one month to six months; for the third offence, revocation of the license, and for the fourth offence, disqualification from holding licenses. These penalties are in addition to the criminal penalties, which may be imposed as follows: For the first offence, a fine of $5; for the second offence, a fine of $100 or thirty days' imprisonment, or both, and for the third and subsequent offences, a fine of from $100 to $250 or imprisonment for thirty days, or both. Violations are made a misdemeanor.

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TO LESSEN SIDESLIP

Tests of an English Device Prove it to Possess Virtue—What it is Like.

More extended experience with the counter-skid, an English device, is said to have demonstrated its efficacy. It is not a preventive, of course. But in the hands of an alert and skilful chauffeur it should go a long way in the direction of checking or minimizing the "sickening side slip" that autoists even on this side of the water have cause to know all too well.

The device is attached to the rear axle of the car, and consists of a pair of hinged brackets which are capable of being raised or lowered at will. Running free on a pin to the end of each of these brackets is a wheel of peculiar construction. Made of steel, this wheel or disk is shaped somewhat like a saucer, with a sharp rim, and when the counter-skid is working these disks are in contact with the road, revolving in consequence. They are located on the inner part of each bracket with the edge actually in contact with the road surface. Supposing, therefore, the driver sees a patch of mud ahead of him or a doubtful corner he drops the attachment from its idle positions, and lets it run.

Now, if the car attempts to slide to the right, the edge of the left hand disk catches instantaneously in the surface of the road and prevents any further movement in that direction. Similarly if the car attempts to skate to the left, the right hand disk grips the surface and instantly checks the sliding motion.

The method of lowering the counter-skid is exceedingly ingenious. On the right hand side of the driver's seat there is a small vertical lever fitted, which when the necessity of lowering the apparatus arises can be instantly released by the merest touch of the driver's elbow, and without requiring to remove his hand from the steering at a critical period.

The raising to the idle position is accomplished, since it is not an operation requiring haste, by a small hand wheel fixed to the side of the car body behind the brake handle and within easy reach of the driver's hand. This wheel has a small drum concentric with it which winds up the flexible wires which raise or lower the brackets. It has a ratchet also attached to it, in which the lever from the seat catches, and naturally, when the ratchet is freed, the brackets with their disks drop almost instantaneously, so that, provided even a side-slip has started it may be instantly stopped by releasing the counter-skid at once.

The greatest difficulty that was encountered in designing the present form of attachment was the question of automatic adjustment to the various conditions under which the car was running, namely, the varying height of the axle from the ground, owing to road vibration, the degree of inflation of tires, etc. This has been overcome by the hinging of the brackets, so that the disk is always on the road in an inclined position. The movement of the hinges is limited by stops of large area, so that should a slip occur so violent as to raise the car on the bracket it would be impossible for it to go further without actually breaking the support. Were this stop not fitted, should such a contingency occur, the last state of the car would be worse than the first, since, not only would the disk be ineffective, but there would be the extra momentum in a transverse direction of the drop from the height of the bracket.

The whole of the mechanism necessary to the working weighs about twenty-five pounds, which is exceedingly moderate considering the immense strength required and embodied in its construction. The price is put at $100, or less, depending entirely on the relative difficulty of fitting to the different makes of cars.

Experiments With Mechanical Valves.

As the result of some experiments carried out in connection with the new Germain carburetter, some interesting figures bearing directly on the vexed question of mechanical and automatic valves are attainable. The experiments were carried out with a four-cylinder engine of approximately 15 horsepower, so arranged that either automatic or mechanical valves could be fitted without altering any other conditions.

The results showed that the engine could be run at a slower pace with the mechanically operated valves, and that when they were fitted more power was exerted stroke for stroke of the engine, though this increment was very small. The natural conclusion is that though the adoption of the mechanically operated valves gives an increase in flexibility to the motor, yet it is doubtful whether the extra complication and friction introduced by the necessary operating mechanism are compensated for by the advantage obtained, leaving out of consideration the question of cost.

Whether these results apply to engines not fitted with automatic carburetters, it is difficult to say without further experiment, but it is questionable whether the most efficient method finally is not to adopt the carburetter regulating the mixture by admission of extra air.

The Week's Exports.

Havre—1 case motorvehicles, $1,890.

Lisbon—1 case motorvehicles, $1,024.

Liverpool—2 cases motorvehicles, $2,800.

Cuba—1 case motorvehicle material, $30.

Newfoundland—1 case motorvehicles, $825.

London—27 cases motorvehicles and material, $22,210.

Argentine Republic—5 cases motorvehicles and material, $1,150.

FRENCH FUEL TESTS

Annual Event Proves Cars Have Advanced in Economy—Three Medals for Peugeot.

For the third successive year the consumption trials organized by L'Auto were held during the last week of February. The usual course was adhered to—that from Suresnes to Corbeil and back, a distance of 100 kilometres (62.1 miles).

The results made it clear that still further progress has been made in the direction of economy in fuel consumption during the past year. Four of the light cars covered the course with a consumption of less than six litres of gasolene—the litre being just over one quart (0.9463 litre equals one quart). Two of these cars—the new six horsepower "Popular" De Dion—consumed exactly 4.4 litres each. It will thus be seen that this figures out at just under two gallons for one hundred miles, as against three gallons in round numbers recorded in the various tests held in this country.

Taking the cars according to their weights, a Peugeot carried off the honors in the next, the "light carriage" class, with a consumption of 5.2 litres for a 6½ horsepower car. Among the big cars, the Chenard-Walcker repeated its triumph of last year, its 10 horsepower car consuming 6.29 litres.

A good showing was made by the industrial cars. A 6 horsepower Gillet-Forest "lorry," carrying a load weighing 910 kilogs, covered a course of 37.2 miles with a consumption of 8.7 litres. Among the cars carrying more than a ton, a 5 horsepower Bardon excelled. It had a load of 1,540 kilogs, with a consumption of 6.96 litres.

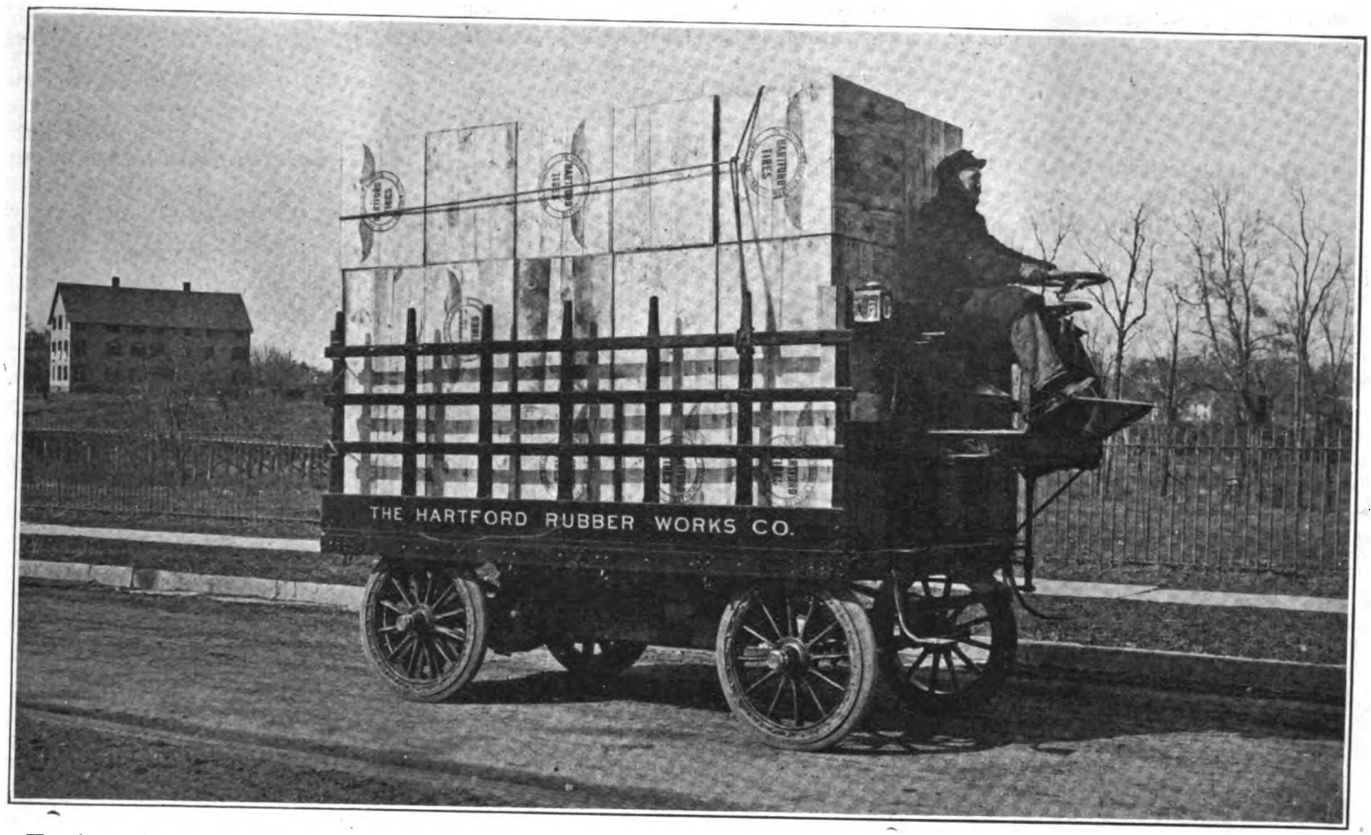
On a classification per kilometre ton the big lorries scored heavily, a 12 horse-power Peugeot getting down to the lowest figure yet officially recorded, of .0489 litre. A 5 horse-power Bardon wagon, however, ran it very close with .0496 litre. Peugeot was also victorious in the light carriage class with .0536 litre, and then came Chenard et Walcker, .5042; 8 horse-power Bardon car, weighing more than a ton, .0592; Chenard et Walcker, .0614; Peugeot light carriage, .0635 litre of alcohol.

All these figures would have been regarded a year ago as something remarkable; but so many cars have got down below what was formerly supposed to be the limit of economy that there is plenty of hope of still better performances being accomplished in the future. It will be remarked, too, that these low consumptions have followed upon the adoption of comparatively slow-running motors, which may possibly have something to do with the results; and there is no doubt that the transmissions are also responsible in a large measure for this greater economy.

A large number of medals and prizes were offered, and among these latter Peugeot secured the lion's share by carrying off the prize for the three vehicles giving the lowest total consumption, a prize for the lorry, another for the light carriage and the gold medal offered by the Minister of Agriculture for the most economical vehicle running with alcohol, as well as a gold medal for the carburetter.

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Electric Truck Proves Its Economy in Hauling Tires.



The Hartford Rubber Works Company not only make tires for automobiles but they use an automobile in transporting the same tires to the railway freight depot in Hartford, as the accompanying illustration makes evident. The truck is used daily in delivering goods at a station two miles distant from the factory and makes four round trips, or sixteen miles, one trip better than was possible with the three-horse team previously employed. The Hartford people estimate the saving to be roughly $20 per week. The truck is the product of the Electric Vehicle Company and is equipped with two General Electric 85v and 20a motors using 42 exide cells. It has four speeds, two foot brakes, wheel steer, vertical controller, full Collinge axles, 36 in. wheels and Turner solid rubber tires.

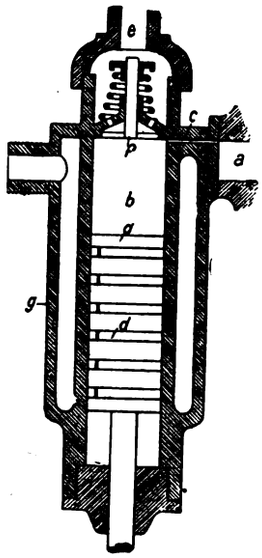
Why Some Tires Become Hot.

There is one point in connection with tires which is not generally understood, and that is the cause of the extreme heat generated. This is mainly due to the friction set up in the material itself. With proper tangential fabric the pull is taken direct from the rim, and consequently the friction from this cause is not considerable. A different state of affairs, however, exists in the layer of rubber lying between the fabric and the road surface. The drive is of course communicated to this layer of rubber. There is no fabric, either tangential or otherwise, to take up the strain, and consequently there is very considerable movement in the rubber itself. This generates heat. The whole question of tire making is hedged round with difficulties of this nature, many of which are not thoroughly understood.

Plans have been drawn for one hundred and fifty houses to be erected at Trainer, Pa., where the works of the Searchmont Automobile Co. are located. They are intended to accommodate workmen who have, owing to the scarcity of houses at Trainer, been unable to find suitable domiciles.

De Dion's Self-Igniting Device.

French patents have been taken out by the De Dion-Bouton Co. on the self-igniting device referred to in these columns a few weeks ago. The principle of the device is the ignition of the charge in explosion motors by means of the heat of compression in a special small cylinder which produces a flame.



The small cylinder (b) is fastened to the side of the main cylinder, and is in communication with the compression space (a) of the latter by a small passage (c). In the small cylinder works a tight fitting piston, which is forced upward in it, once for every two revolutions of the motor crank shaft. An explosive mixture is admitted to the cylinder at the upper end thereof through an automatic suction valve (f). When the piston in the small cylinder is forced upward the gaseous charge therein is compressed to the point of self-ignition, and the flame travels through the small passage to the compression chamber in the main cylinder and explodes the charge therein.

In order to vary the time of ignition the mechanism by which the piston in the small cylinder is operated must be arranged to effect this operation at a variable period.

It is understood that the makers of the Mercedes, the Daimler Co., will make a determined effort this year to win the Bennett Cup. The team has not been yet selected, but it is thought probable that Count Zborowski, Baron de Forest and M. Degrais will be selected, all three having lately joined the German Automobile Club.

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Labor Leaders' Great Scheme.

To form a stock company to purchase and operate automobiles for the transportation of passengers during street railway strikes is a plan said to be entertained by labor organizations. At a conference between Samuel Gompers, president of the American Federation of Labor; President Mahon of the Street Railway Employes of America, and Chairman Dillsworth of the National Board of the Street Railway Organizations, the plan was discussed. If it were carried out thirty automobiles would be sent to Waterbury, Conn., to be operated by strikers for passenger service.

Road Books as an ad.

In a handy pocket form Heineman & Pratt have issued an automobile road guide to Southern California. Starting from their store in Los Angeles, the best routes to nearby places are indicated on outline maps. Incidentally views of the concern's salesroom are given, together with a description of the work done in the garage and repair shop.

Stevens Will not Move.

The report that the automobile department of the J. Stevens Arms & Tool Co., Chicopee Falls, Mass., would be removed to the factory formely occupied by the Overman Wheel Co. is denied. The company's search for better quarters for the body department caused the rumor to originate. It has now been decided to make no change.

The "Colony" at the Noon Hour.

Biggest of the half dozen or so automobile "colonies" in this city is the one in the neighborhood of Broadway and Thirty-eighth street. Luncheon time there presents an animated and unusual appearance. The chauffeurs and mechaniciens pour out by the score, and, after staying the inner man with a hasty "bite," give themselves up to the luxury of a smoke and a little chat. Arrayed in garb of all sorts—from the conventional leather cap, coat and leggins, to ordinary citizens' clothes—they present a picturesque appearance.

They break up into little groups and discuss the burning questions of the day. Their joys and sorrows form the bulk of their talk. The perverseness of motors, the peculiarities of owners, the difficulty of keeping within the legal speed limit and getting anywhere, the narrow escapes from too zealous cops—these are just a few of the topics that are touched upon. And then, their period of play at an end, they disappear almost as quickly as they came in view, and but for the occasional passage of a car on a demonstrating trip the street would seem almost deserted. The scene of activity has been transferred to the salesrooms and garages.

A new storage, repair and sales station has been opened at 62 West Forty-third street, New York, by the American Touring Car Co. The company is agent for Jones-Corbin cars.

Surprised by the Kensington.

The new Kensington touring cars are reported to be revealing unexpected excellencies. According to Homan & Schulz, who sell them in New York city, the running qualities of the car have surprised them. It is a vehicle to which not a great deal of attention has been attracted, and being little known and advertised, not much was expected of it even by its agents. They say they have been agreeably surprised though, for it runs without a bit of trouble every time one goes out, and when it comes to climbing it fairly "eats the hills."

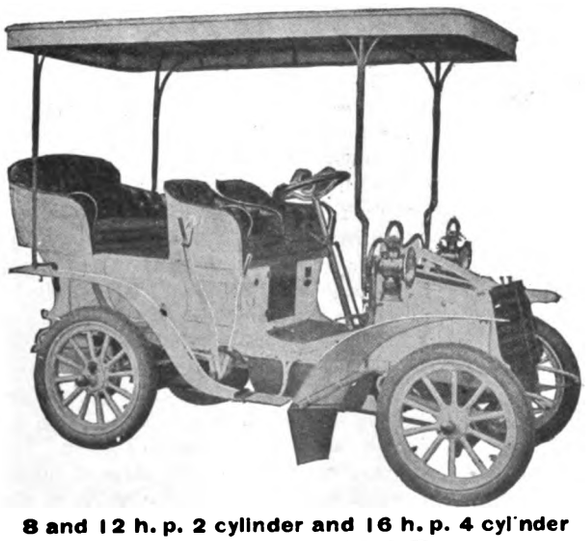
Room for 50 Cars in Jersey City.

The new store and garage of the Crescent Automobile Co., Boulevard, near Duncan avenue, Jersey City, N. J., is almost completed, and the removal from the old place at Crescent and Communipaw avenues will take place this month. Storage room for fifty cars has been provided, and the place has been fitted up in the most approved and up to date manner.

Denver's Peculiar Demands.

"The high altitude of Denver, Col., plays havoc with all except cars of very high power," says W. A. Richwine, of the Autocar Co. "It necessitates a reduction of the compression chamber, and in the case of automatically operated intake valves a lightening of the springs of these valves.

The CHAINLESS CUDELL



8 and 12 h. p. 2 cylinder and 16 h. p. 4 cylinder
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28 West 33d Street. Telephone, 2754 Madison.
Downtown Garage, Motor Vehicle Storage & Repair Co., 131 West 31st Street. Telephone, 2375 Madison Square.
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Baltimore Agency, A. G. Spalding Bros., 25 West Baltimore Street.
Philadelphia Agency, Motor Vehicle Power Co., Sixteenth and Wood Streets.
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LEASED AND OPERATED
LINES AND ON SEVERAL
CONNECTING LINES,
AGGREGATING OVER
6000 MILES OF TRACK.

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HOW THEY ORIGINATED

Various Types of Vehicles That Took Their Designations From Prominent Persons.

For such an ancient trade the most popular type of horse drawn carriages are of very modern origin. The phaeton is almost two hundred years old, and the barouche is of considerable greater age. But the brougham, the victoria, the stanhope, the surrey, etc., all date from the last century, and, curiously, were all named after notable personages for whom they were designed.

The brougham is a closed carriage, with driver's seat in front of the body and well elevated. The French call it a coupé, from coup, meaning cut. Its origin is due to Lord Brougham, who, in his younger days, was a judge, and in travelling in his circuit in the old style vehicle experienced more or less discomfort. The idea occurred to him one day that a smaller vehicle, suited for two persons, would be much better than the more cumbrous vehicles then in general use. He made known his notion in the matter to a prominent carriage builder, and explained what he wanted and asked him if he could build such a vehicle. The builder went to work, and produced the brougham substantially as it is to-day. Lord Brougham was born in Edinburgh, Scotland, September 19, 1778, and died at Cannes, France, of old age, in 1868.

The stanhope, as originally built, had a comfortable front seat for two, coachman and footman in the rear. It was constructed with and without top. The gentleman always drives. The French call it a phaeton, and the English call it a stanhope or stanhope phaeton. The original was made without a top, used for sporting purposes, and was designed for the Hon. Fitz Roy Stanhope.

The phaeton at present is made in many styles. The French and English builders apply this term to several distinctive styles, but it is not used there as much as in America. The first phaeton was made in the year 1704, and was named for "Phaeton," called the shining one in Homer. The term is known in mythology, and indicates a son of the sun, and sometimes the ocean nymph Clymene.

The victoria was first made in England in 1850, anad was named after Queen Victoria. It is a lady's park carriage, having a low seat in the rear, intended for two persons, covered with a half top or cabriolet top, and has an elevated seat for the driver in front.

The surrey originated in England about 1840. The name was taken up in this country and first applied by J. B. Brewster & Co. to a very light wagon for two, but later was built for four

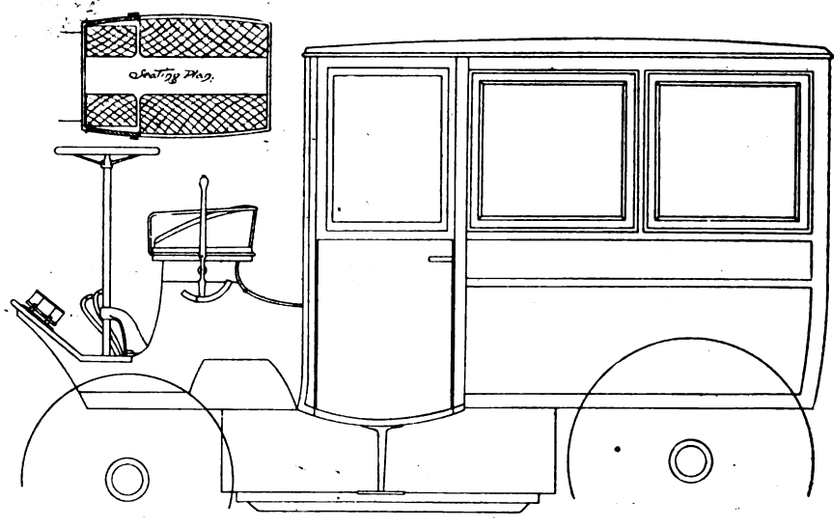
The hansom was designed and built by Joseph Hansom, Leicestershire, England, in 1834, and is a two wheeled vehicle, with doors or lid in front and a driver's seat above and behind.

The barouche is similar to the caleche, and, like the brougham, has a driver's seat. It has two seats, carrying four passengers back of the driver, with a three or four bow top over the rear seat. In the United States barouches have been made with an extension top. It derived its name from a French architect named Barochio, and who made the original barouche about the year 1560. Barochio was born in 1507 and died in 1573.

The wagonette is a four wheeled vehicle, carrying six or more passengers. It was built for Lord Curzon in 1843, and was designed by Coach Builder Lovell, near London, England.

Miss Griggsby's Side-Door 'Bus.

To so manœuvre an opera 'bus that the rear end is backed up against the curb, ready for the ingress of its consignment of fashionably dressed people, is no easy task.



It is especially difficult on a congested street like Broadway, with its two lines of trolley tracks and its hurrying throngs of pedestrians and wheeled vehicles of every description. There is scant time at the chauffeur's command. He must handle his 'bus with consummate skill, or his passengers will be compelled to ignominously go into the street and enter from that point of disadvantage.

To obviate all this a New York society woman, Miss Griggsby, is having the Electric Vehicle Co. build her a special 'bus, with the door on the side. With this arrangement—shown clearly in the appended drawing—egress and ingress will be easy, precisely like that afforded by a brougham or other well appointed vehicle. In other respects the 'bus is a duplicate of the company's standard pattern.

So well pleased is Miss Griggsby with the working of electric vehicles that she is contemplating disposing of her horses and horse-drawn vehicles and replacing them with self-propelled ones. She has had an electric landau in service for two years, and her proposed action is largely attributable to the satisfaction it has given.

HOW TIRES GAIN WEIGHT

Why the Weighing Test Designed to Prove Wear Really Proves Nothing.

It is said that the uselessness of weighing tests for tires, designed to show the wear through attrition, was pointed out in a convincing fashion to the judges in the tire tests of the British Automobile Club last year.

One of the competitors pointed out the uselessness of this test under the conditions laid down, and succeeded in inducing the judges to weigh a new set of tires, which had been in their possession from the date of the commencement of the trials. It was found that they had actually increased in weight from two pounds upward, and if the weighing test had been proceeded with, it would possibly have been found that some of the tires in use had also increased in weight.

The explanation is really simple. Both rubber and fabric are dried most carefully in the factory for several weeks, so that every trace of moisture is removed. Now, both are to a certain extent porous, and when left in an ordinary humid atmosphere, absorb a considerable amount of moisture, which of course increases the weight.

Daimler's New Braking Device.

The Daimler Company are said to be adopting a new braking arrangement for the countershaft on their latest cars, and are using metal for both friction surfaces. The device consists of a pair of band brakes on either end of the countershaft, the drums being fixed directly inside the chain sprockets. The bands are steel lined, and the apparatus is worked from the foot pedal. The movement of the pedal causes the brakes on the wheel drums to act simultaneously with those on the countershaft with a consequent distribution of the strain.

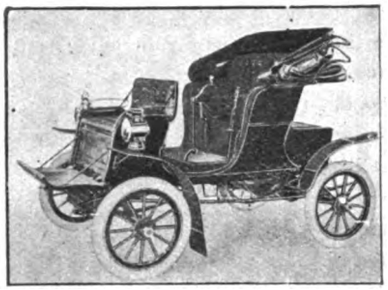
The advantage claimed is that a great strain is taken from the differential and that less pressure is required for reducing the momentum.

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IT STARTS FROM THE SEAT.

"STEVENS-DURYEA"

GASOLENE AUTOMOBILE



is not made like others. Its motor is 7 horse power, has 2 cylinders and is of the opposed type. Has 3 speeds and reverse, all operated by the same lever and is not surpassed for

Speed—Reliability—Hill Climbing.

It runs without NOISE or VIBRATION and is so simple in construction that it is safe in a lady's hands.

Price at Factory Including Complete Equipment $1300.00.

J. STEVENS ARMS & TOOL COMPANY,
690 MAIN STREET,
CHICOPEE FALLS, MASSACHUSETTS.

GENUINE IMPORTED FRENCH AUTOMOBILES.

DARRACQ

CARS hold more records than any other make in the world. Weekly importations insure the **Latest Styles and Immediate Delivery.** Original 1903 styles, great speed with perfect throttle control, quiet running, no viabration: *every* modern improvement is offered with the most **Luxurious Furnishings.**

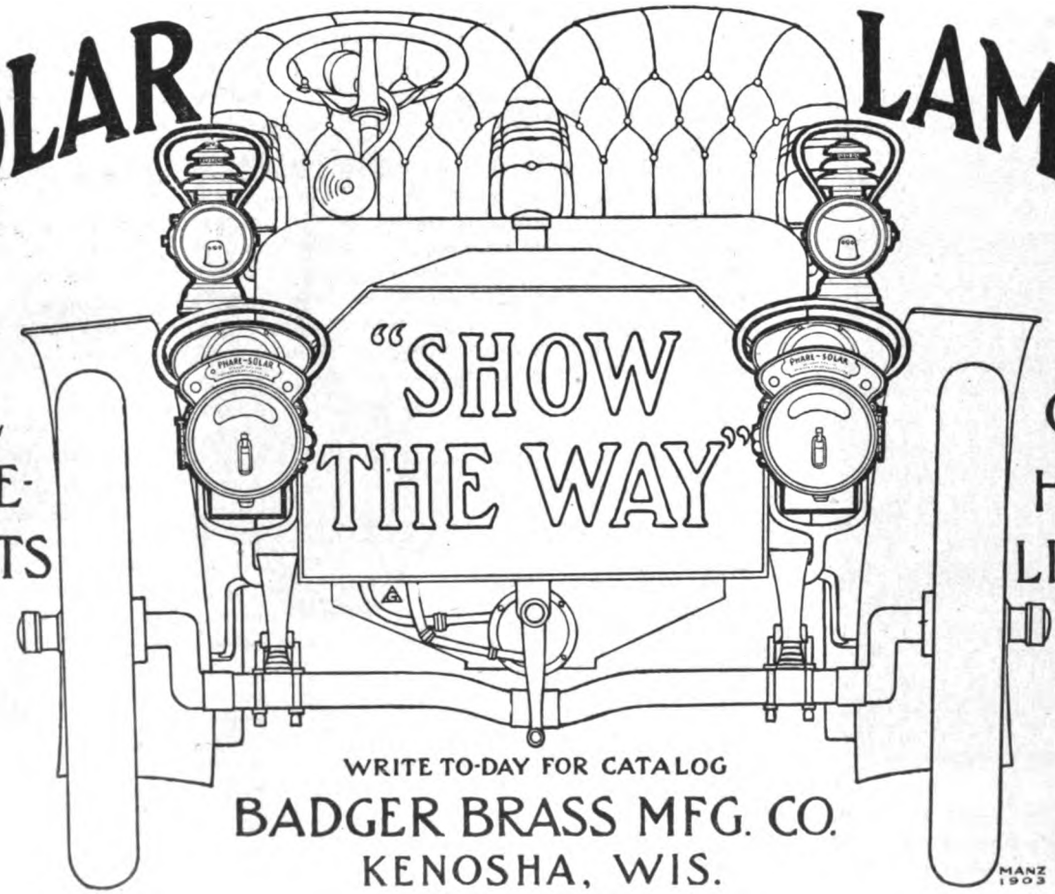


20 Horse-Power Darracq with Top and Tonneau Detachable

Eight, 9, 12, 16, 20 and 24 horse-power models from 1 to 4 cylinders. Darracq popularity is shown by the fact that THREE-FOURTHS of the entire business importation of automobiles in 1902 were DARRACQ CARS. We have a few 1902—9 horse-power cars—bargains for quick buyers. See our *Delivery Wagons.* Darracq Gasolene Motors sold separately.

AMERICAN DARRACQ AUTOMOBILE CO., Controlled by THE F. A. LAROCHE CO.
Agents for the Cleveland Roadster
652 HUDSON ST., (near 14th St. Station 9th Ave. "L," NEW YORK.

SOLAR LAMPS



OIL SIDE-LIGHTS

GAS HEAD-LIGHTS

WRITE TO-DAY FOR CATALOG

BADGER BRASS MFG. CO.
KENOSHA, WIS.

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TESTED THE HYDROLEUM

And the Burner for Steam Vehicles Developed an Array of Favorable Figures.

Some interesting experiments have been conducted with the Hydroleum fuel system, about which so much has been heard lately. They were in charge of W. Worby Beaumont, the eminent English motor vehicle authority, who used a Locomobile for the purpose.

In one case gasolene was burned with the Locomobile burner, and in the other crude Texas oil with the Hydroleum burner. The trials consisted of two runs of fifty and fifty-two miles over practically the same road one days when the roads were in an approximately similar condition of surface anad through similar traffic.

The main purpose of the trials was to ascertain the relative evaporation power of the same boiler with the two very different kinds of fuel. The run with the gasolene burner in use was made without any noteworthy incident, the burner behaving uniformly well. On the trials with the Hydroleum burner the driver was skilled in its use, but not sufficiently so on the road to avoid occasional excess in water level and consequent wetness of steam passed to the boiler. In the evaporation tests with the car standing, similar conditions as to feed water temperature, and feeding were observed. The records were begun after evaporative conditions had become normal, a two hours' test being sufficient for so very small a boiler.

With the gasolene the evaporation per pound of fuel was much greater when the car was running and the boiler in a constant state of small oscillation and vibration than when the car was standing still. When referred to the usual standard of evaporation—namely, from and at 212 degrees—the evaporation on the road trial was 15.8 pounds of water per pound of petroleum spirit, while with the car standing the evaporation was 11.5 pounds per pound of fuel. The figures referring to the Hydroleum burner trials show that the equivalent evaporation with the car on the road was rather more than with the petroleum spirit with the car standing, but was rather less than with the Hydroleum burner with the car standing, the equivalent evaporation per pound of oil being 11.88 and 11.92 pounds from and at 212 degrees, which must be considered a highly satisfactory quantitative result with so small a boiler. If the Hydroleum burner had not been extinguished four times during the run a higher rate of evaporation per pound of oil would no doubt have been obtained when running.

The water evaporated per gallon of fuel was higher with the oil than with the petroleum spirit, and the quantity of water evaporated per hour and per mile covered was greater with the oil than with the petroleum spirit, again pointing to wetness of steam during the oil run. The rate of evaporation per hour with the petroleum spirit burner was much lower when the highest duty per pound of fuel was obtained than with the higher rates of evaporation per hour. When the boiler evaporated as much per hour during the petroleum spirit trial as in the oil trial on the road, the consumption of fuel was greater than with the oil. From this it will be seen that with the smaller rate of evaporation per hour dryer steam is obtained with greater economy and used with greater economy.

The cost of fuel for the two journeys was 87 cents with the standard gasolene burner and only 16 cents when the Hydroleum system was employed—a considerable economy being thus effected.

To Aid Chain Lubrication.

Numerous efforts have been made to devise some way of insuring thorough lubrication of chains. One method is to introduce an oil siturated felt pad in the chain links. Another even more effective is being tried by the makers of the Brampton chain, al-



though so far it has been confined to the larger and more expensive sizes.

As will be seen from the accompanying drawing, this is effected in a very simple manner. Each rivet is drilled with a hole at its centre, into which another hole is led from the outside of the rivet as shown. The central hole is counterbored to admit of the insertion of a light spring and a one-quarter inch steel ball, the latter being retained by spinning over the edge of the counterbore.

Advancing the Electric Car.

Entirely aside from its electric motoirs, controllers, cutouts, etc., the great Westinghouse Company is giving attention to the installation of station and private charging outfits.

The station switchboards are intended for use where several vehicles are charged simultaneously. They are so arranged that the voltage and current of any vehicle being charged may be controlled and measured at the board. This makes it possible to make all measurements with only one set of instruments and to keep an accurate record of the condition of each battery. The rheostats used in connections with these parts are either of the grid or imbedded type and are well ventilated and of substantial and non-inflammable construction.

The private switchboards are supplied with volt-meter, ammeter, switches and an automatic circuit breaker, which prevents the over-charging of the battery. These switchboards may be mounted on a wall and occupy very little space.

CEMENT IS NECESSARY

Why the Man who Would Secure Tires With Lugs Only Courts Trouble.

"It may not be strictly parliamentary, but I want to say that the man who advocated securing tires to rims merely by the lugs is an egregious idiot," remarked a tire man to The Motor World representative. "He just simply doesn't know what he is talking about. I don't care how practical a man he is, nor how many tires he has put on. At best he is one of those self-opinionated workmen who think they know better than men who have been making tires all their lives.

"When you come right down to it you must admit that the experience gained in making, selling and riding bicycle tires counts for a great deal. Well, what does that experience teach us? Why, that one of the things you have got to do, if you want your tires to stay on, is to fasten them right. In the days of steel rims we used a hard cement, and it did fairly well. When the wood rim came in we had to try something else, on account of the difficulty of heating the cement without hurting the rim. Consequently, there was lots of trouble with creeping tires.

"It began to be observed that Columbia wheels were free from this fault. Some one of an investigating turn of mind looked into the matter and found that instead of cement they used shellac to fasten the tires. That did the business. I have known men to tear part of the rubber coating of the tire off in pulling it away from the rim, so tightly did it stick. That was unnecessary, of course, for a little gasolene would loosen the tire sufficiently to get it off without trouble. And after that this particular dealer began to use shellac also, and with splendid results.

"Now if a bicycle tire is hard to keep on the rim, what must it be with an automobile tire? Every influence at work to cause creeping in the first case is present and working overtime in the second. That is why the tire makers began to put lugs on. With them the chance of creeping is much diminished. But you can't depend entirely on lugs. You must have the tire grip the rim all the way around, and just as tightly as possible.

"That is where the cement, or, much better, shellac, comes in. It will make the tire grip. So will good cement; but it should be good. With a rim that fits the tire properly, and a tire that is shellacked or cemented, with lugs as well, you have some chance of avoiding accidents. But to omit any of these is, as I said, idiotic.

"The next time you see that smart Aleck who doesn't want anything but lugs to hold tires, you present my compliments to him and tell him what I say. It is dollars to doughnuts that he has lots of tire troubles, but hasn't sense enough to discover that it is his foolishness in dispensing with cement and shellac that is causing it all."

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Features of Billings's Mors.

What was undoubtedly the first of the 1903 crop of Mors cars imported by private owners made its appearance at Smith & Mabley's on Saturday. The car was the direct importation of C. G. K. Billings, the well known horseman, and was released from the Custom House only the day before.

It is an imposing looking car. It is rated at 45 horsepower, and contains the new features that are directly traceable to the influence of the Mercedes on French construction. The intake and exhaust valves are arranged on opposite sides of the cylinders, both being operated mechanically by means of half time shafts driven from the engine shaft by fibre gear wheels. A honeycomb radiator of the lozenge type, aided by a flywheel and a pressed steel U frame, are other conspicuous features.

The body is of the limousine pattern, roomy and exceedingly comfortable. Access to the rear portion of the body is afforded through the front, the left hand forward seat lifting up and leaving an opening. There is room for four passengers in the rear, the seats being parallel, transverse instead of longitudinal, and facing each other. The appointments are most complete and luxurious. There is a speaking tube, by means of which the chauffeur can be communicated with, and two electric lights. The interior is furnished in fawn colored cloth, and the body is finished in a rich cream color, with dark trimmings.

How he "Dodged" Storage Charges.

"Just heard of a sale that made my mouth water," remarked a well known Brooklyn autoist to the Motor World man last week. "And that although I have two cars and have no earthly use for another.

"It was that of a friend of mine who is going abroad. He intends to bring a foreign car back with him, and this being so he was naturally anxious to dispose of his own—a little runabout of well known make. It was not a particularly good time to sell automobiles, and as my friend wished to get rid of his before he sailed he was ready to let it go cheaply.

"The best offer he could get was one of $200—an absurd figure, as the vehicle was in fine condition. For a moment he was tempted to refuse it, but reflecting that the money would pay his passage both ways, and he would not have to pay storage while away, he accepted it.

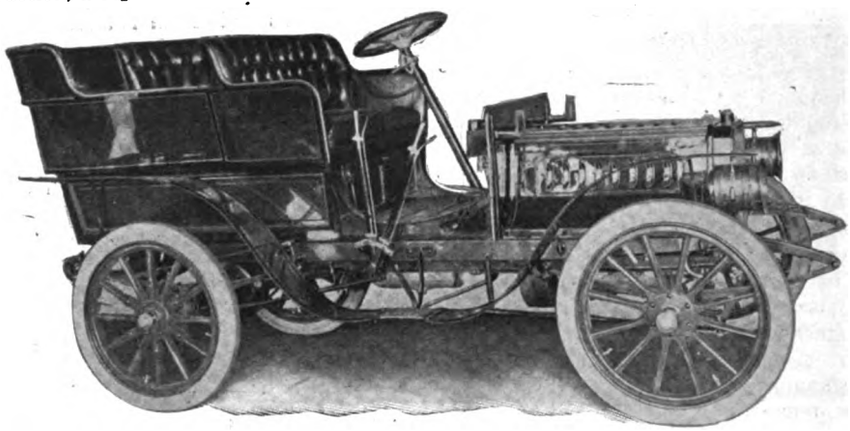
"I hope the purchaser appreciates his bargain, for it is a bargain if ever there was one."

Mechanical Inlets an Uphill Aid.

It is not only on large cars that the mechanically operated intake valve proves good practice. The fact that so many of the small American cars have used this method of opening both intake and exhaust, and with such excellent results, makes this plain. One thing that has not been much noticed is the beneficial effects resulting from its use uphill. With the single cylinder engine straining, and the piston speed fallen down to one-half, the automatic valve which works perfectly on the level is either not admitting a full charge or is not holding it—according to the inlet spring tension. Several devices to obviate this acknowledged defect have been tried, but it is extremely doubtful if they are, on the whole, as good as the mechanical inlet. Of course, this will wear, but do not inlet springs lose their tension, and is it necessary to lose the benefits of an advance because it brings in some increase of necessary supervision?

Concerning the Clement Car.

One of the most admired cars at the Madison Square Garden show was the Clement. In France the car has won a splendid reputation, both for clever designing and sound construction, a reputation that is almost certain to be enhanced by its career in this country.



THE FOUR CYLINDER CLEMENT CAR.

The four cylinder Clement is shown in the illustration. It is constructed with an armored wood frame, and has such up to date features as mechanically operated intake valves, honeycomb radiator, direct drive on the high speed, the expanding segment type of friction clutch, etc. The transmission is by sliding gears through a longitudinal shaft to a live rear axle. The ignition is by means of a magneto, and the water cooling is done by a centrifugal pump working direct through the engine.

Fournier is Full of Electricity.

"Both M. Rabourdin and myself came back from the United States absolutely filled with electricity, thoroughly convinced that, for city work, nothing for convenience and pleasant riding could beat the 'battery worked' conveyance," Henry Fournier is quoted as saying.

"Electric supply can be obtained for miles around New York and all other important American cities, and in time we shall have it here in France. We have therefore entered into a contract with a French company here to furnish us with motors, and, with the bodies and upholstering made by Messrs. Rothschild, we are now ready to supply the most stylish turnouts in the brougham or landaulet form."

Keep Grease off the Tires

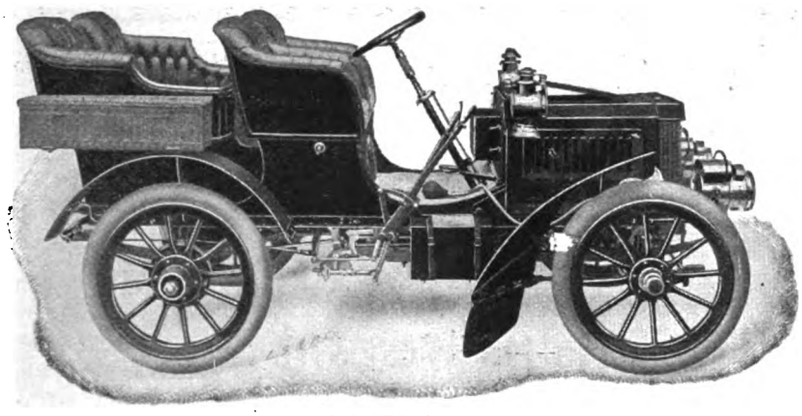
Unusual care should be taken to prevent oil or grease getting and remaining upon the tires. All fatty substances are detrimental, as they act as a solvent upon the rubber. This can be easily proved by rubbing vaseline upon a piece of an old cover. The vaseline will cause the rubber to become spongy, and when dry it will crumble, and can be rubbed into powder by the friction of the hand. It is most important, therefore, that the rubber of pneumatic tires should at all costs be protected against grease. Messrs. Michelin et Cie state that they have had covers under their hands in which the stiffened edge had been completely rotted off by a neglected lubricator allowing oil to trickle down on the tire. Lubricators which are in positions likely to admit of this should, therefore, be frequently scrutinized. Also care should be taken that no part of the moving mechanism of the car throws oil on to the tires. For the above reason, spare tubes should always be placed in rubbered cases whenever they are likely to come in contact with oil cans, oily cloths or tools.

When Wood Wheels Require Retruing.

One place where the proverbial stitch in time saves nine is where wood wheels are concerned. Who has not seen wheels that are out of round, particularly laterally? Retruing is a thing which cannot be attempted by the ordinary repairer, and must be put into the hands of a competent carriage builder who makes his own wheels or who can get them trued up by a firm which makes a specialty of wheel building. The trouble is caused chiefly by the wheels being built up with imperfectly seasoned timber, which is greatly affected by atmospheric changes, causing fluctuations in the tension upon the wheel. This will expand in wet weather, while in dry seasons it contracts and tends to split apart at the felloe and at the junction of the spokes with that part, despite the fact that the whole is bound by the iron rim of the tire.

Work has been commenced on a building for the Tioga Automobile Company, Philadelphia. It will be 32x74 feet and one story in height.

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Style "F." Type 6.

THE Peerless Motor Car Co. were the first American manufacturers to adopt the Vertical Motor, mounted in front One year hence all makers will follow their lead.

NEW ENGLAND BRANCH—Boston, Mass.
NEW YORK—Banker Brothers Company, 141-143 West 38th St.
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PITTSBURG—Banker Brothers Company, Baum and Beatty Streets, (Agents for the State of Pennsylvania.)
WASHINGTON—National Capitol Automobile Company, 1124 Connecticut Avenue.
ROCHESTER—Rochester Automobile Company, 150-170 South Avenue.
BUFFALO—Ellicott Evans, 84 White Building.
CHICAGO—A. C. Banker, 458-460 Wabash Avenue.
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PASADENA, CAL—J. G. Lovell.

THE PEERLESS MOTOR CAR CO., Lisbon St., Cleveland, O.

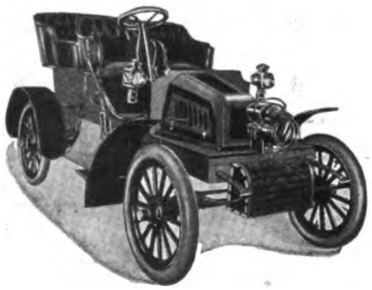
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SHELBY, OHIO.

MANUFACTURERS OF

The Shelby

GASOLENE 10 AND 20 H. P. CARS.



OUR MOTOR. Two PISTONS in one CYLINDER; takes charge in the center, forcing both pistons in an outward direction, reducing vibration to a minimum. Over 40% better efficiency than in a single acting motor.

This is only one of the many superior points found in the SHELBY CARS. For further particulars,

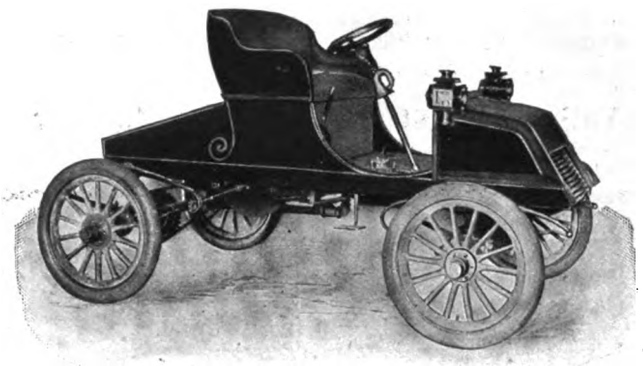
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The GENERAL



FOR ALL SEASONS.

An 8 H. P. Gasolene Runabout right in every particular. Built to satisfy the most exacting conditions—service the first consideration always. Write for catalog.

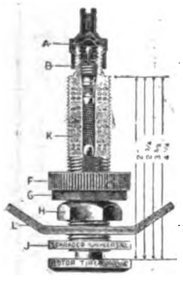
AGENTS IN ALL THE PRINCIPAL CITIES.

The General Automobile & Mfg. Co.

CLEVELAND, OHIO.

SCHRADER UNIVERSAL VALVE.

Trademark Registered April.



SIMPLE AND ABSOLUTELY AIR TIGHT.

MOTOR TIRE VALVES, as shown in cut, are made in four lengths as shown. Cut is exactly half size of the 2 in. valve

SUPPLIED TO THE TRADE BY ALL TIRE MANUFACTURERS.

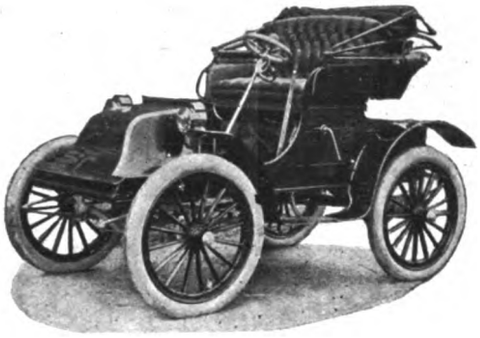
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A. SCHRADER'S SON, Nos. 30-32 Rose Street, New York.

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THE HAYNES-APPERSON

is unique. It is its own type. It has proved the best for American roads, better than foreign types—better than the so-called "American type" of motor car. It is the oldest make in America—one of the oldest in the world—the most thoroughly developed.



It is interesting to note that the 1903 "Improvements" of the Paris Show have all been features of the Haynes-Apperson Car for years. Our throttle control and sparker with magneto is superior today to the best foreign practice; also our band clutch, free from end-thrust.

We have issued (in addition to our regular catalogue) an interesting booklet that tells why it is the best. Shall we put you down for one? You will greatly oblige us by naming THE MOTOR WORLD when you write. Catalogue free, too.

Runabout, $1200; Phaeton, $1500; Surrey, $1800.

TONNEAU—READY BY SPRING—PARTICULARS LATER.

HAYNES-APPERSON CO., Kokomo, Ind., U.S.A.

"Eastern representatives, Brooklyn, Automobile Co., 1239-41-43 Fulton Street, Brooklyn, N. Y. New York Location to be announced later."

Agent for
WHITNEY CARS.

FOREIGN PARTS AND TIRES CARRIED IN STOCK.

SMITH & MORTENSON COMPANY,

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AUTOMOBILES

STORED AND REPAIRED,

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A complete new fireproof garage, open day and night.

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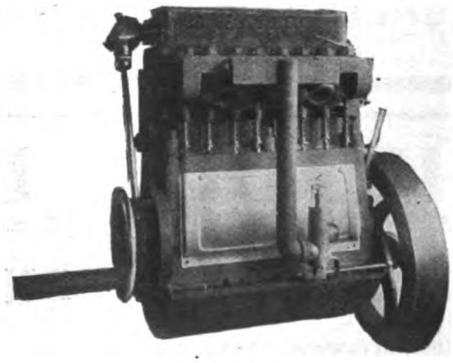
LIGHT. POWERFUL. RELIABLE.

EXHIBIT AUTOMOBILE SHOW.

FOR

Gasolene Motors

FOR TONNEAU AND EVERY OTHER STYLE VEHICLE.



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BUFFALO GASOLENE MOTOR CO.,

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EXHIBIT SPORTSMAN'S SHOW.

STEADY. SPEEDY. ECONOMICAL.

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JEFFERY UNCOVERS FLAWS

Points out the Illogic and One-Sidedness of the Pending Wisconsin Law.

There are plenty of holes in the armor of legislators who prepare anti-automobile bills. A few of them are touched upon in a letter sent to the Milwaukee "Wisconsin" by Thomas B. Jeffery & Co., the well known Kenosha concern. Animadverting upon the measure now before the Wisconsin legislature, they say:

"You have doubtless noticed that a bill is now before the Wisconsin legislature to not only license automobiles, but to compel every user thereof to stop at the bidding of every farmer or user of a carriage driven by a horse, attaching a penalty to non-compliance with such a request.

"Taking the first part of the proposed bill, the licensing of automobiles, it seems to us, is a retrograde step for a State aspiring to be so progressive as Wisconsin. The licensing question has been thrashed out in practically all the Eastern States, and we believe that in only one (New York) is a license exacted for an automobile. In any event, were such an act passed for Wisconsin, the revenue derived from such a source would for some time to come be barely more, if any, than the costs of collection. Taking it in the broader sense, it is placing an unjust restriction upon people who prefer motor driven carriages to horse driven carriages, and shows a discrimination entirely opposite to the accepted rule of fair play. No argument in favor of taxation upon automobiles, on the ground of their being a luxury, can be logical, inasmuch as reliable automobiles can now be purchased for about the same price as a good horse and buggy, and their factors as sources of danger are not to be compared.

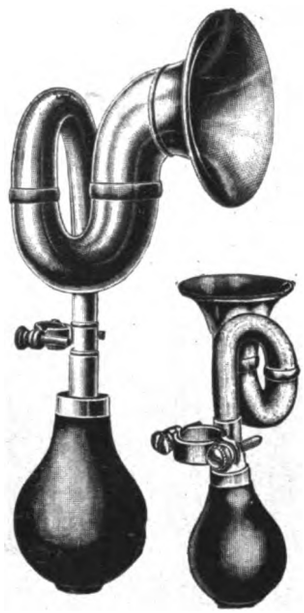
"A horse whose mind is at variance with that of his driver generally solves the question by becoming uncontrollable and running away, damaging, in a majority of cases, not only his owner, but the innocent bystander. An automobile in a like mood simply stops, and waits until its owner has attained that frame of mind that will enable him to arbitrate the point in dispute in a reasonable frame of mind and mechanical manner. Tests, public and otherwise, have been made a number of times to demonstrate the respective distance in which it is possible to stop a horse and carriage and an automobile, and such tests have proved beyond question that the automobile can stop in very little more than its own length, while the horse requires several times its own length. The possible danger, then, from this point alone is predominantly in favor of the automobile.

"Taking that part of the proposed bill which subjects the user of an automobile to the will of all horse users, this seems to us so totally ridiculous that it is hard to find even a single argument in its favor. Those who have used motor carriages will bear out our assertion that in probably 90 per cent of the cases where a horse is frightened at meeting an automobile the fright is not caused by sight of the motor carriage, but by the unreasonable actions of the driver of the horse, who seems imbued with the idea that it is a necessary part of the horse's nature to be frightened at the sight of a motor carriage, and who, immediately one comes in view, commences "sawing" on the horse's mouth and otherwise frightening him with no apparent reason for so doing, and the horse then naturally ascribes the actions to the sight of the automobile, and acts accordingly. This is a matter that can be verified at any time on our country roads."

Dannat Discovers Another "Sin."

The automobile has another sin to answer for. It has played the chief part in killing art, or, to be more precise, one of the arts, viz., painting. W. A. Dannat, president of the Society of American Painters, Paris, has made the startling discovery.

"The automobile is chiefly responsible for the withdrawal of the interest of society people from art. It is an exciting sport, and brings one into the open air. For young men it is more attractive than being imprisoned in a studio among brushes and paints. I have taken to automobiling myself, and I enjoy the sport. So it goes," he says. "The world is always changing. We give up art for sport, and lay aside the brush in order to manage the motor."



Motor Car Horns.

All Sizes and Shapes, also fitted with flexible metal tubes.

Finest Quality Bulbs. Clear, Loud Tones.

NICKEL PLATED OR POLISHED BRASS.

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WE HAVE CONSTANTLY ON HAND CHOICE BARGAINS IN SECOND-HAND MACHINES

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STATE YOUR REQUIREMENTS. We CAN MEET THEM, IF ANYBODY CAN.

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EVANS'S EARLY EFFORT

Produced a Steam Wagon 100 Years ago but was Laughed at—His Many Rebuffs.

It was during the Boston reliability contest last fall, and at the banquet at Springfield, that Winthrop E. Scarritt spoke feelingly of the earliest of American automobile inventors, Oliver Evans. Like so many others of his class, Evans was doomed to failure and defeat. He was many years ahead of his age. All that he prophesied and worked for has come to pass, but not in his day. He died, laughed at and neglected.

Evans first saw the light in 1751 at Newport, Del., three miles from Wilmington, the chief city of Delaware. He learned the wheelwright's trade, but at eighteen years of age he left his native village and went to Philadelphia, where for almost half a century he struggled to develop his many inventions. His first successful invention was a machine for carding wool and cotton, which had previously been done entirely by hand. In 1786 he applied to the legislature of Pennsylvania for a patent on his steam wagon, but it was refused as unpractical and the work of a visionary, although the same body allowed him a patent on his improvements in the making of flour. In England, where he also applied for patents, his ideas were characterized as absurd. Ten years later the legislature of Maryland granted him a patent and allowed him to use his wagon on the roads of that State. But this was of little avail, beyond the mere recognition, as he was too poor to have a wagon, and so far in advance of contemporaneous wealth that he could not raise money enough to build one and demonstrate its value.

Evans then laid his plans before the Philadelphia and Lancaster Turnpike Co., which did an immense business in transportation to the westward. He asserted that with an engine which could be constructed for $1,500, a carriage for $500 and allowing $500 for "unforeseen expenses," a total expense of $2,500, one hundred barrels of flour could be hauled, at two miles an hour, fifty miles in two days, thus doing the work of twenty-five horses and five wagons for three days, which cost $3,304. But the turnpike people could not comprehend this; they were making money enough on their teams, and so would not consider the matter.

After thirty years or more of dreaming and battle Oliver Evans saw his first horseless carriage moving on wheels by its own power. The Philadelphia Board of Health allowed him to construct a machine for cleaning the docks of the city. This was in 1804.

At the beginning of the nineteenth century Evans made the following prophecies in a letter to a New York newspaper:

"The time will come when people will travel in stages moved by steam engines at fifteen to twenty miles an hour. A carriage will leave Washington in the morning, breakfast at Baltimore, dine at Philadelphia and sup at New York the same day. Railways will be laid of wood or iron, or on smooth paths of broken stone or gravel, to travel as well by night as by day. A steam engine will draw a carriage 180 miles in twelve hours, or engines will drive boats ten or twelve miles an hour, and hundreds of boats will so run on the Mississippi and other waters, as was prophesied thirty years ago (by Fitch), but the velocity of boats can never equal that of carriages upon rails, because the resistance in water is eight hundred times more than in the air."

By one means and another Evans managed in time to secure money enough to establish a machine shop in Philadelphia, where he did various kinds of repair and other work, but busied himself chiefly in materializing his ideas in the development of machinery for saving time and labor in all branches of industry. This shop, in the later years of his life, maintained him and his family in comparative comfort; but one fatal day it was burned to the ground, involving a loss of $15,000 and destroying his patterns and his papers. This was the final blow. The fire occurred on April 11, 1819. The stricken man went to New York to secure, if possible, means to make a new start. On the Saturday following the Philadelphia newspapers contained this brief notice:

"Died at New York, on Thursday, 15th inst., at the home of Elijah Ward, Oliver Evans, Esq., of Philadelphia, in the sixty-fourth year of his age. His remains were interred yesterday afternoon."

He was buried in the old Zion Cemetery, but in later years the body was removed to Cypress Hills, where it now lies.

With good gasolene in the carburetter a car will give vastly better results than if a poor fluid were used. But the mixer that won't work in some fashion with a grade of gasolene much under 70 degrees would not be of a great deal of use outside of the large cities.

REVIEWED BY WILHELM

Berlin Show Opened With a Parade, Red Fire and a Solid Square of "Hochs!"

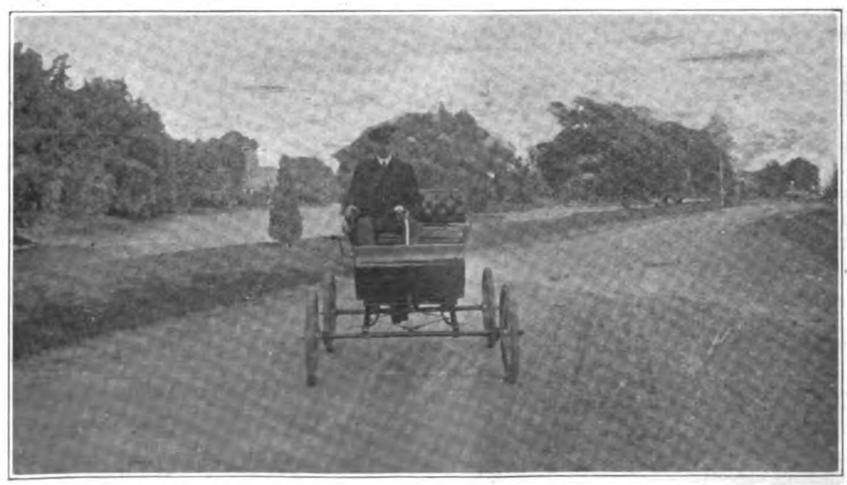
Preceded by a highly successful parade, reviewed by the Emperor and other notables, the Berlin automobile show was opened on Saturday. Although confined to German vehicles, it is regarded as far exceeding expectations. Indeed, it is held to reveal the really remarkable progress made by the German industry. Unlike previous exhibitions, it met with popular approval, a fact due in part to the official recognition bestowed upon it.

The exhibition is being held in the Flora Garden. It and the adjoining palm gardens presented a brilliant sight. There were manay handsome exhibits, conspicuous among them being those of the Mercedes, the Cudell, the Opel company, the Dietrich company, the Benz company, the Continental company, the new automobile company, the Argus. There was also a notable exhibit of automobiles employed in the German army.

More than three hundred beautifully illuminated and decorated automobiles were in the parade. The course extended from the west end of the race course through the Thiergarten, along the Unter den Linden to the royal castle in the Lustgarden.

In a monumental square, fronting the Schloss, the automobiles drew up with military precision. Upon the terrace of the palace the Emperor, Prince Henry, Prince Friedrich Leopold and a group of officers awaited the procession. The magnificent proportions of the William the Great monument were revealed in Bengal light.

After the automobiles had ranged up in a solid square the Duke of Ratibor called for "Hochs!" and while the band rendered a specially written automobile march he handed the Kaiser a handsome leather bound album containing the names of participants in the parade and numerous sketches.



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The Week's Patents.

722,206. Steam engine. Byron J. Carter, Jackson, Mich. Filed Jan. 18, 1902. Serial No. 90,331. (No model.)

Claim.—1. In a steam engine, a cylindrical steam chest, a rotary shaft in the axis of one head of the steam chest, a rotary valve on the inner end of the shaft, means for rotating the shaft, an exhaust port in the axis of the other head of the steam chest, segmental ports concentric with the exhaust port, a reverse valve having a central exhaust port and segmental ports to correspond, with the ports in the head of the steam chest, a rod in the axis of the exhaust port and connected to the reverse valve and means for adjusting and holding the same, substantially as described.

722,223. Gas or gasolene engine. Bernt Garllus, Madison, Wis. Filed Dec. 7, 1901. Serial No. 85,105. (No model.)

Claim.—1. In an internal combustion engine, the combination with the cylinder, piston and admission valve, of an exhaust valve loaded to stand normally in its open position, a governor driven by the piston and co-operating with the exhaust valve to close the same at proper periods during the cycle of the engine when the speed of the engine is at or below normal, and means independent of its load for positively unseating said valve, whereby sticking of the valve on its seat is prevented; substantially as described.

722,224. Automobile. Leonard B. Gaylor, Newton Centre, Mass. Filed Dec. 6, 1902. Serial No. 134,066. (No model.)

Claim.—1. In a motor vehicle the combination of a motor supported otherwise than upon the body of the vehicle, an elastic platform which connects two transverse axles and holds them in parallelism, a seat mounted on the platform, wheels on the ends of the axles and means for operating two of said wheels for the purpose of steering.

722,243. Automobile carriage. William H. Noyes, Newburyport, Mass., assignor to Amos L. Prescott, Passaic, N. J. Filed Jan. 27, 1902. Serial No. 91,500. (No model.)

Claim.—1. The combination of a carriage body, a footboard pivoted to the front end of said body, a dashboard pivoted to the footboard, and supporting devices which maintain said footboard and dashboard in suitable relation to each other and to the seat when dropped down, said body having sides, the front edges of which are conformed to said dashboard and footboard, and against which said dashboard and footboard are adapted to be folded.

722,262. Motor vehicle. Roy Stone, New York, N. Y. Filed Aug. 1, 1902. Serial No. 117,932. (No model.)

Claim.—1. The combination with a motor vehicle of a merchandise truck or wagon, a means for connecting and disconnecting the same and for changing the relation of the parts as connected so that the adjacent wheels of the respective vehicles are raised clear from the ground.

722,278. Driving wheel for traction motors. Edward Boniecki, Kouzmincy, Russia. Filed July 11, 1902. Serial No. 115,194. (No model.)

Claim.—1. The combination with the rim of a wheel, of plates each comprising a section extending diagonally of the rim, a section extending transversely to the rim and a guard section arranged eccentrically to the rim.

722,309. Heating feed water for motor vehicles. William J. Lane and George Lane, Poughkeepsie, N. Y. Filed Jan. 29, 1902. Serial No. 91,738. (No model.)

Claim.—1. In a motor vehicle, the combination of a water tank, a steam generator, a pipe leading from the water tank to the steam generator, a drum inclosing a portion of said pipe and located below the level of the water tank, a source of steam connected to said drum, a pipe connected to the bottom of the drum and discharging into the water tank, and a discharge pipe leading from the drum, such pipe of the required size to normally create sufficient back pressure to cause the steam discharged into the drum to lift the water of condensation from the drum into the water tank.

722,330. Low water alarm for steam boilers. Freelan O. Stanley, Newton, Mass. Filed Oct. 25, 1902. Serial No. 128,726. (No model.)

Claim.—1. The combination with a boiler and burner, of a pipe below the boiler, a tube connected detachably with said pipe and containing a fusible plug at a point above the burner, and having its outer end open and exposed, substantially as described.

722,333. Electric igniting device. Friedrich Sturm, Stuttgart, Germany. Filed Jan. 20, 1901. Serial No. 44,894. (No model.)

Claim.—1. The combination with an electric igniter, and means for adjusting the moment of sparking of said igniter, of a generator arranged to supply an electric current to said igniter, and provided with an adjustable pole piece connected to said adjusting means, whereby the moment of sparking of the igniter and generator may be simultaneously adjusted.

722,339. Protecting band for pneumatic tires. John Wheeldon, Sheffield, England. Filed May 22, 1902. Serial No. 108,528. (No model.)

Claim.—1. An intermediate protecting band adapted to be inserted between the air tube and tread of a pneumatic tire consisting of inner and outer strips of fabric, and a layer of small plain sections of sheet metal fitted closely together side to side, end to end and edge to edge between the strips of fabric, and cemented together with the strips of fabric.

722,357. Carburetter for gas engines. Herbert A. Davis, Philadelphia, Pa., assignor to J. H. Brinton, Philadelphia, Pa. Filed March 1, 1902. Serial No. 96,224. (No model.)

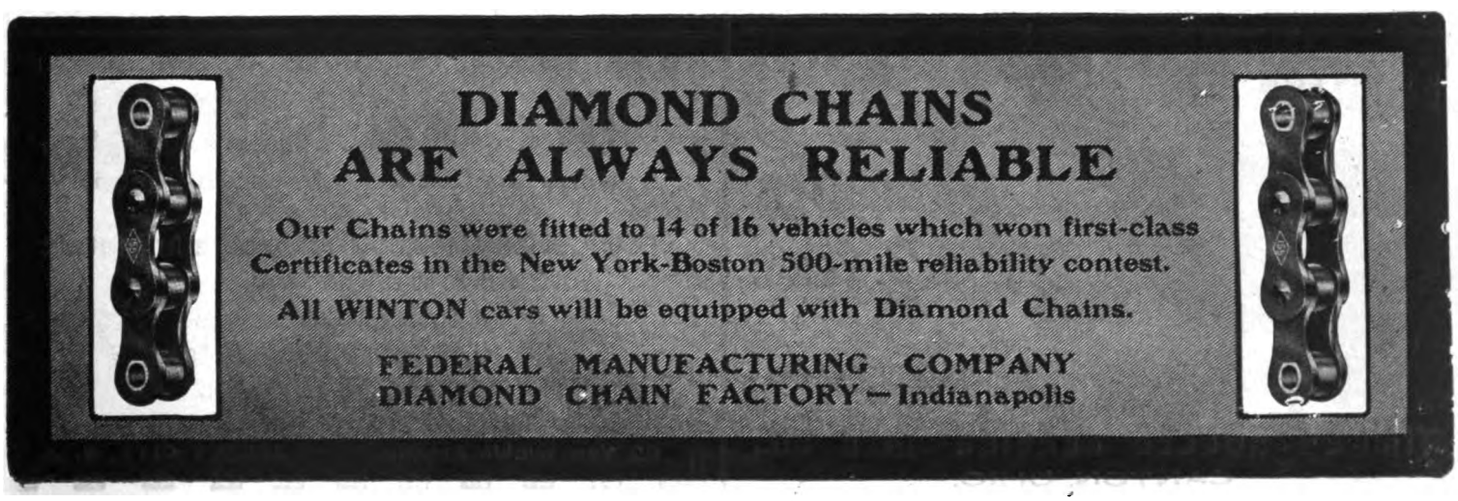
Claim.—1. In a carburetter, a rotary valve, a fuel conduit controlled thereby, a lift valve, an air conduit controlled by said lift valve, a stop connected with said rotary valve for limiting the opening of said lift valve in proportion to the opening of said rotary valve, said lift valve being adapted for closing said fuel conduit, substantially as specified.

722,431. Hydrocarbon motor. James W. Packard, Warren, Ohio, assignor to Packard Motor Car Company, Warren, Ohio, a corporation of West Virginia. Filed May 8, 1900. Serial No. 15,878. (No model.)

Claim.—1. In an engine of the class described, in combination, the pump barrel having lateral inlet and discharge openings, a piston reciprocating in said barrel, a plunger in said barrel arranged to be moved in one direction by the piston, an adjustable abutment arranged to move said plunger in the opposite direction, connections between said piston and said abutment whereby they are moved simultaneously, an operating lever, and connections between said lever and said abutment whereby the abutment may be adjusted relatively to the piston while the engine is running.

722,440. Piston ring. Walter G. Wilson, Westminster, England. Filed June 23, 1902. Serial No. 112,916. (No model.)

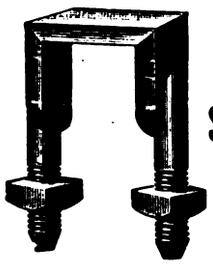
Claim.—1. The combination with a piston, of a split piston ring thereon having recesses in its ends, a spring as wide as the ring lying freely between it and the piston, a tongue formed integral with the spring to rest in the recesses in the end of the ring.



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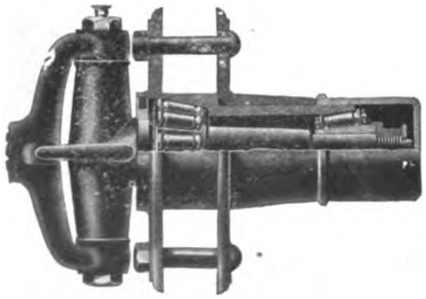
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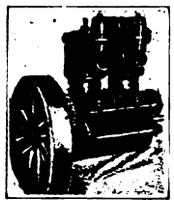
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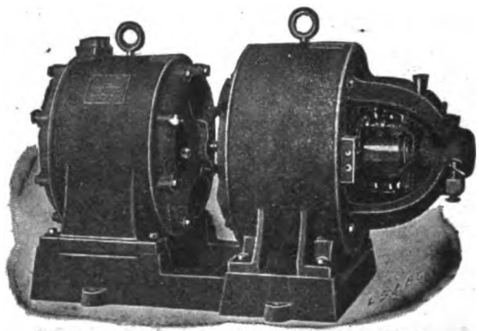


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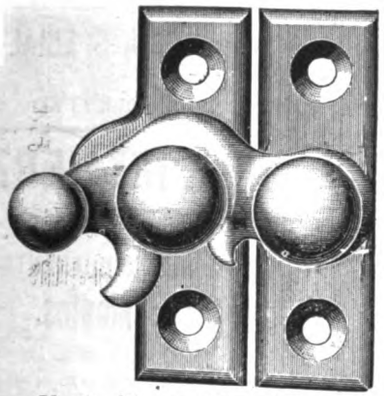
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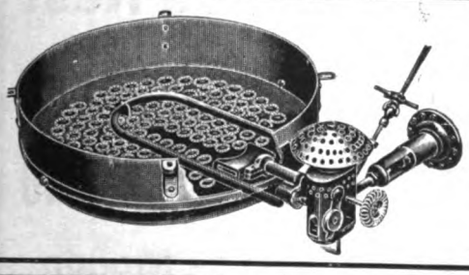
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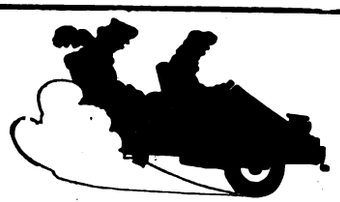


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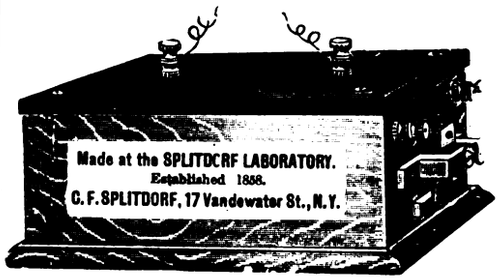
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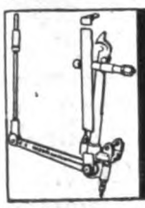
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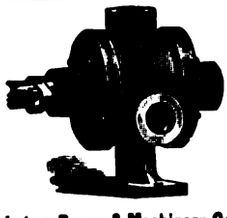
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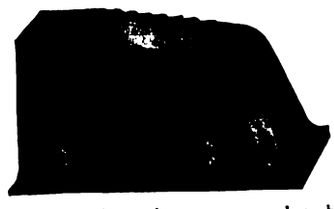
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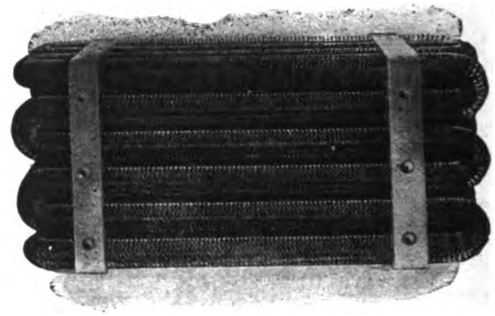
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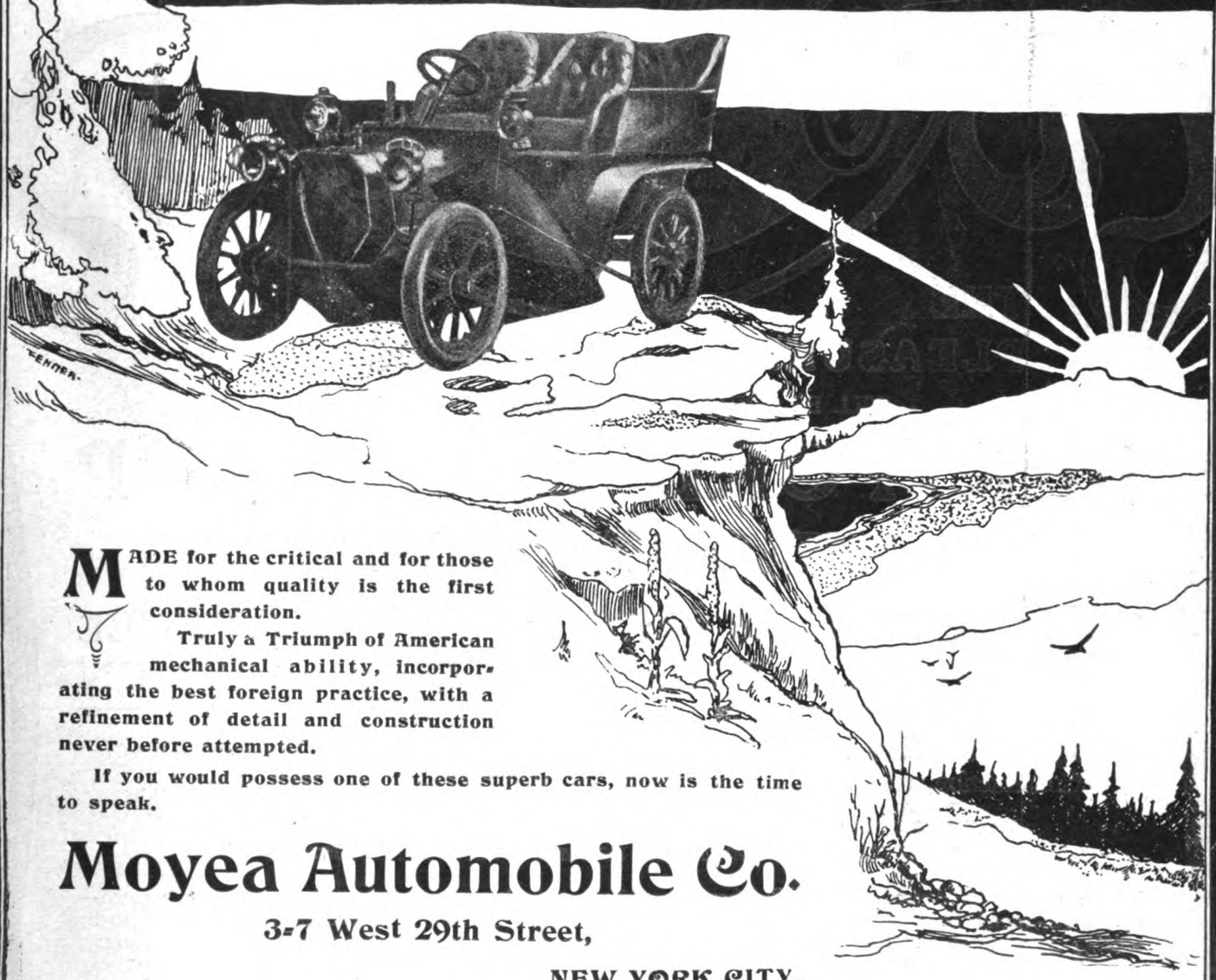
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MADE for the critical and for those to whom quality is the first consideration.

Truly a Triumph of American mechanical ability, incorporating the best foreign practice, with a refinement of detail and construction never before attempted.

If you would possess one of these superb cars, now is the time to speak.

Moyea Automobile Co.

3-7 West 29th Street,

NEW YORK CITY.

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THE PLEASURES OF AUTOMOBILING

WILL BE GREATLY ENHANCED BY THE USE OF

HARTFORD or DUNLOP PNEUMATIC TIRES

The ORIGINAL and "MODEL" TYPES of SINGLE AND DOUBLE TUBE TIRE CONSTRUCTION

Appreciating the fact that requirements vary as to Single Tube and Detachable Tire Construction, we offer the most reliable of both types—*The Honest Standards.*

THEY WERE BEST YEARS AGO, AND YEARS OF INTELLIGENTLY PERSISTENT, CAREFULLY DIRECTED EFFORT HAS MADE THEM BETTER TO-DAY.

Where Quality is desired—where Comfort, Durability, and Protection against Annoyances is wanted—where All-'round Satisfaction is demanded—these tires should be adopted. Let us prove this to you by sending you signed statements from some of the most prominent makers and users in this country.

The Hartford Rubber Works Company, Hartford, Conn.

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Specify the "Exide" Battery.

EXIDE BATTERY DEPOTS

NEW YORK 148 West 18th Street.
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FOR FURNISHING AND CARING FOR EXIDE BATTERIES.

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THE ELECTRIC STORAGE BATTERY CO.

PHILADELPHIA, PA.

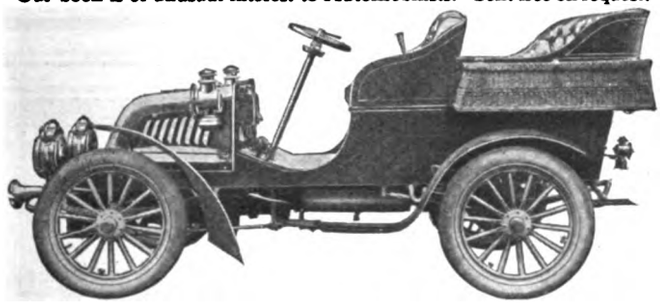
PHILADELPHIA, Allegheny Ave. and 19th St.
CHICAGO, Marquette Building.
ST. LOUIS, Wainwright Building.
NEW YORK, 100 Broadway.
BALTIMORE, Continental Trust Building.
SAN FRANCISCO, Nevada Block.
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The U. S. LONG DISTANCE TOURING CARS

Are Preeminent for Speed. Safety, Reliability and Economy.

Our book is of unusual interest to Automobilists. Sent free on request.



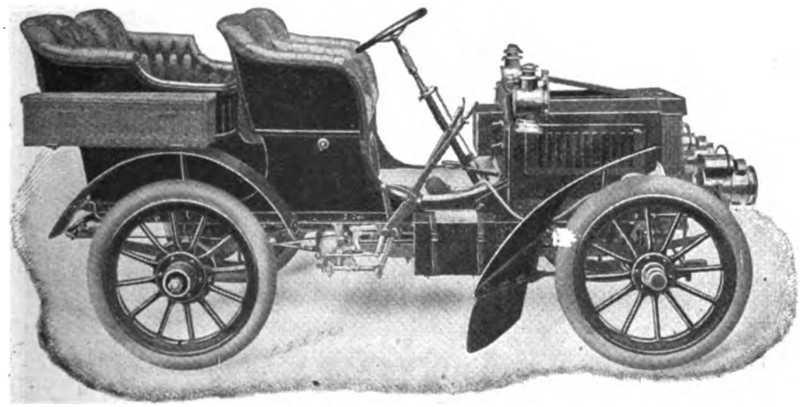
TYPE C—TONNEAU. Two Cylinders. Vertical Engine.

Built for service, long runs and hill climbing, simply operated, free from vibration, each part easily reached, no intricate machinery to get out of order.

Type A—Runabout, $1,250.
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Factory, 307 Whiton Street, Jersey City, 110-114 West 41st Street, New York.



Style "F," Type 6.

THE Peerless Motor Car Co were the first American manufacturers to adopt the Vertical Motor, mounted in front One year hence all makers will follow their lead.

NEW ENGLAND BRANCH—Boston, Mass.
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WASHINGTON—National Capitol Automobile Company, 1124 Connecticut Avenue.
ROCHESTER—Rochester Automobile Company, 150-170 South Avenue.
BUFFALO—Ellicott Evans, 84 White Building.
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SAN FRANCISCO—National Automobile & Manufacturers' Co. 26 Fremont Street.
PASADENA, CAL—J. G. Lovell.

THE PEERLESS MOTOR CAR CO., Lisbon St., Cleveland, O.

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G & J TIRES

merit the attention of all who are looking for "the best tire" and will not be satisfied with anything else.

We make no noisy generalizations, which, like rockets, explode with much commotion, but end in nothing but vanishing smoke,

The proof lies in the unanimous verdict of satisfaction rendered by their users ever since pneumatic tires were first introduced, and in their great and constantly increasing use everywhere, which proclaims them to be of the highest quality that skillful workmanship and best material can produce.

"Only Known Values are Imitated"

Do not be misled by imitations. Demand the "G & J." and money will be saved by getting more wear with fewer repairs.

G & J TIRE CO. *Indianapolis, Ind., U. S. A.*

A TRADE TERM:

"WESTON-MOTT QUALITY"

IN WHEELS.

ARTILLERY WOOD or WIRE.

GET WITH US.

WESTON-MOTT CO., Utica, N. Y.

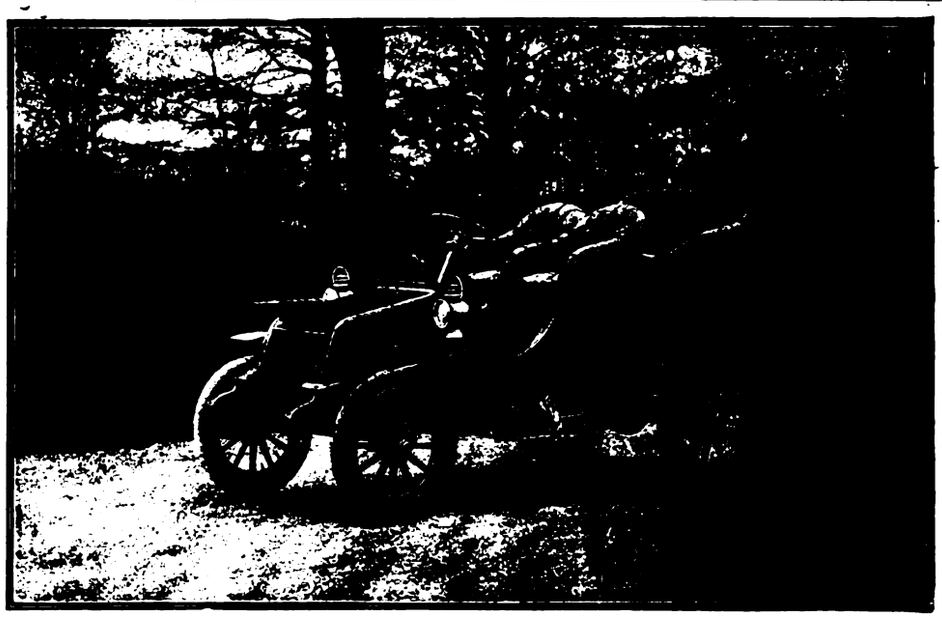
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WE ARE IN EARNEST

in advising you to place your order at once if you are going to get a

WINTON

So many folks are getting Winton 20 h. p. Touring Cars that somebody will surely have to wait. That somebody will be the man who trails in late with his order.



PRICE, COMPLETE, $2500

AGENCIES IN ALL THE PRINCIPAL CITIES

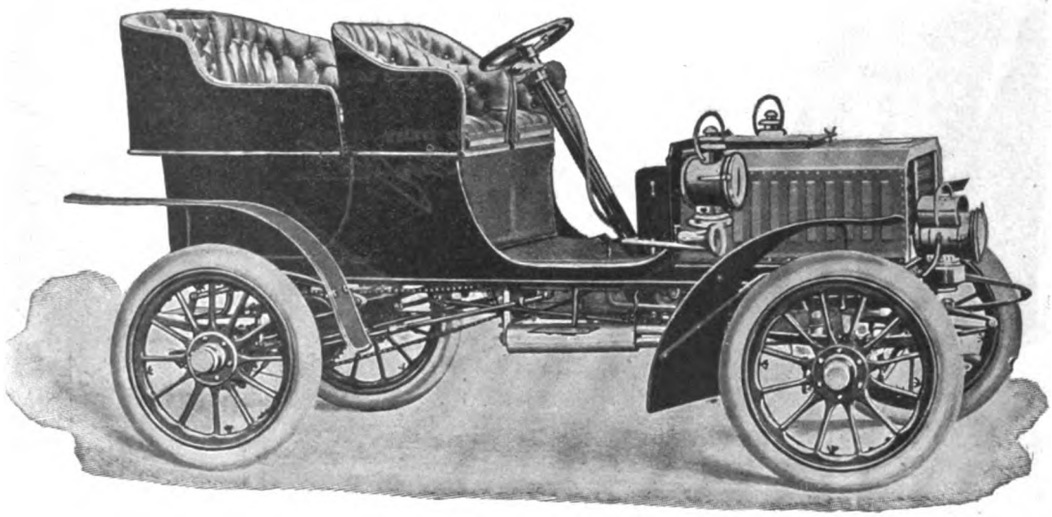
THE WINTON MOTOR CARRIAGE CO., Cleveland, U.S.A.

BUFFALO'S PIONEER AUTOMOBILE MANUFACTURER

EXPERIENCE COUNTS AND WE HAVE HAD FIVE YEARS OF IT.

Can you afford to sell your customers experiments? Our touring car is unsurpassed in quality and equipment by any.

Prompt Deliveries.



The CONRAD 8 H. P. Gasolene Runabout is the only one made in U. S. having a vertical double cylinder motor, wheel steer and sliding gear transmission, which sells for less than $1000.

Price $750

CONRAD GASOLENE 12 H. P. TOURING CAR. PRICE $1250.00.

THE CONRAD MOTOR CARRIAGE COMPANY, 1413-1419 Niagara Street, Buffalo, N. Y.

AGENCIES

NEW YORK CITY—Pennsylvania Electric Vehicle Co., 152 West 18th St.; BOSTON—Bates Brothers, 145 Columbus Ave.; PHILADELPHIA—Pennsylvania Electric Vehicle Co., 250-256 North Broad St; PITTSBURG—L. G. Martin Co., 3995 Forbes Ave., opp. Hotel Schenley; MINNEAPOLIS—Northern Cycle Supply Co., 116 So. Sixth St.; ROCHESTER—F. A. Mabbett, 66 East Ave.; BINGHAMTON—Binghamton Automobile Station, 259 Water St.; DETROIT—W. H. Weber, 288 Woodward Ave.; DENVER—Falker Cycle Co.; CHICAGO—Chas. P. Root, 435 Wabash Ave.; INDIANAPOLIS—S. W. Elston, 2325 E. Ohio St.; AKRON, OHIO—J. W. Miller & Co.; WATERTOWN, N. Y.—W. C. Greene, Washington Hall Block.

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"THE RED DEVIL" AND THE TIRES THAT EQUIPPED IT.

The Honorable Tom L. Johnson Tells His Experience

—WITH—

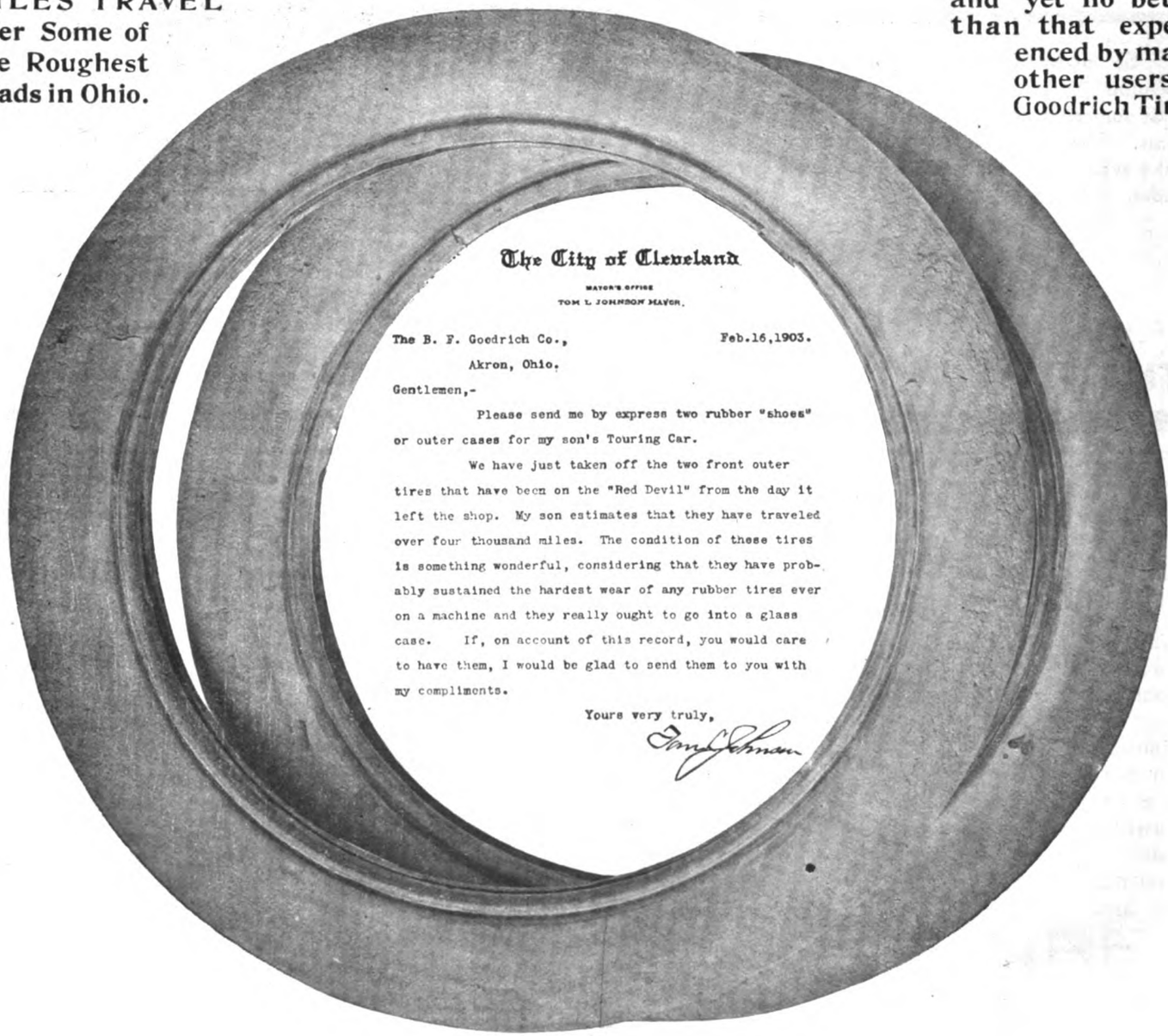
Goodrich Clincher Automobile Tires

As Equipment on the Famous "Red Devil" Touring Car.

FOUR THOUSAND MILES TRAVEL Over Some of the Roughest Roads in Ohio.

READ THE LETTER!

A wonderful record and yet no better than that experienced by many other users of Goodrich Tires.



The City of Cleveland

MAYOR'S OFFICE
TOM L. JOHNSON MAYOR.

The B. F. Goodrich Co., Feb.16,1903.
Akron, Ohio.

Gentlemen,-

Please send me by express two rubber "shoes" or outer cases for my son's Touring Car.

We have just taken off the two front outer tires that have been on the "Red Devil" from the day it left the shop. My son estimates that they have traveled over four thousand miles. The condition of these tires is something wonderful, considering that they have probably sustained the hardest wear of any rubber tires ever on a machine and they really ought to go into a glass case. If, on account of this record, you would care to have them, I would be glad to send them to you with my compliments.

Yours very truly,

Tom L. Johnson

The above cut is a true picture of the tires referred to in Mr. Johnson's letter. No attempt having been made to retouch the photograph or obliterate in any way the marks of wear.

THE B. F. GOODRICH COMPANY,

Akron Rubber Works,

AKRON, OHIO.

NEW YORK, 66-68 Reade Street.
CHICAGO, 141 Lake Street.
PHILADELPHIA, 922 Arch Street.
BOSTON, 157 Summer Street.

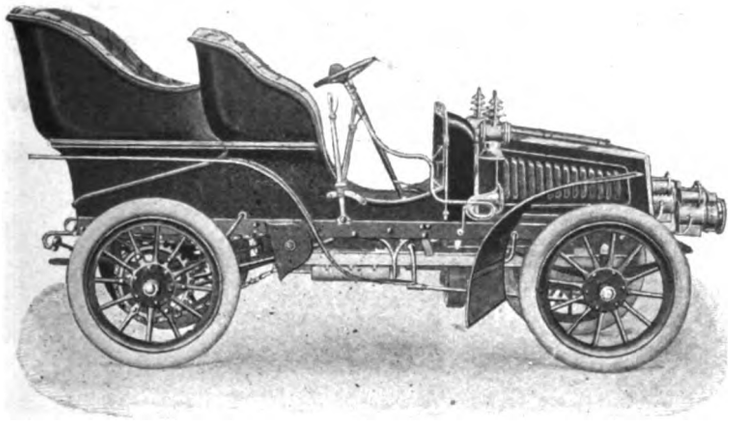
LONDON, ENGLAND, 7 Snow Hill, E. C.

BUFFALO, 9 West Huron Street.
DETROIT, 80 East Congress Street.
SAN FRANCISCO, 392 Mission Street.
DENVER, 1444 Curtis Street.

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Automobile Perfection

is reached and maintained in the always reliable



"Toledo"

vehicles. The 24 horse power, four cylinder, gasolene touring car shown in the illustration, has every good feature of the best foreign makes, costing $8,000 to $12,000 and many new features originated by us. Moreover, the "Toledo" is better adapted to American roads and conditions. We make 12, 18 and 24 horsepower touring cars, 2, 3 and four cylinders, prices $2,000 $3,000 and $4,000.

Catalogue, name of our agent nearest you and interesting automobile literature sent on request.

INTERNATIONAL MOTOR CAR CO., 3065 Central Ave., Toledo, Ohio

LARGEST AUTOMOBILE FACTORY IN THE WORLD.

RESULTS at the NEW YORK SHOW Prove the "YALE" MOTOR CAR a Success.

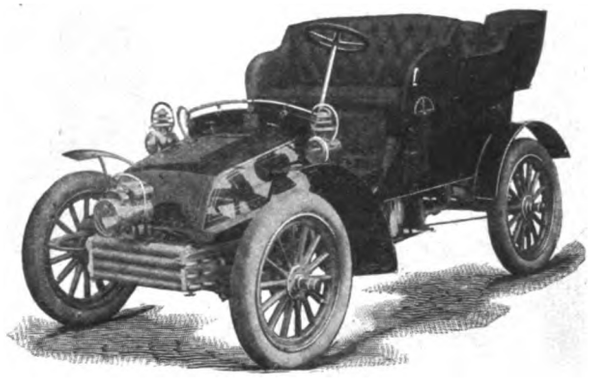
WE DEMONSTRATED TO ALL COMERS AND DID BUSINESS.

A RATIONAL VEHICLE,

AT A RATIONAL PRICE,

$1750.

NO VARIATIONS.



SIMPLICITY—
STRENGTH.

ELEGANCE IN DESIGN.

THOROUGHNESS IN WORKMANSHIP.

WE HAVE APPOINTED THE FOLLOWING AGENTS AND WILL CONSIDER A FEW MORE:

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PARDEE & COMPANY, Chicago, Ills.
CENTAUR MOTOR VEHICLE COMPANY, Buffalo, N. Y.
W. B. METZGER, Detroit, Mich.
P. J. READ, Newtonville, Mass.
QUILLING BROTHERS, Cleveland, Ohio
JAMES LUCEY, Troy, N. Y.
HYSLOP BROTHERS, Toronto, Ontario.
N. W. CHURCH, Los Angeles, Cal.

THE KIRK MANUFACTURING COMPANY, Toledo, Ohio.

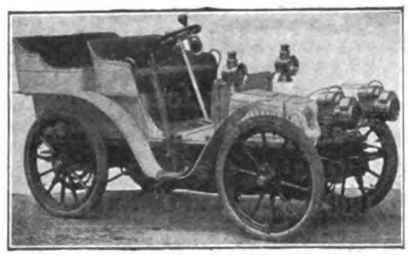
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AGENTS FOR Paris Automobile Societe Anonyme HENRY FOURNIER Mo

11 & 18 H.P. MORS 1903 Model Attracted special attention PARIS AUTO SHOW.

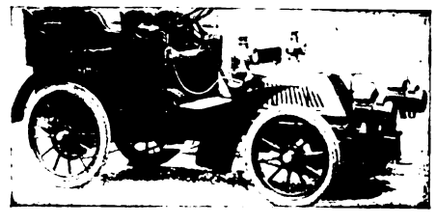


8 H. P. MORS.

Prompt Deliveries of 8, 11, 18 H.P. MORS

THE CENTRAL Automobile Co. 1684 BROADWAY. TELEPHONE: 2397 2398 COL.

REPAIRS. STORAGE.



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Prompt Deliveries of RENAULT, PEUGEOTS, Mercedes.

OPEN DAY AND NIGHT.

LARGEST AND BEST EQUIPPED AUTOMOBILE DEPOT IN THE UNITED STATES.

ALL KINDS OF FRENCH AUTOMOBILE PARTS KEPT IN STOCK.

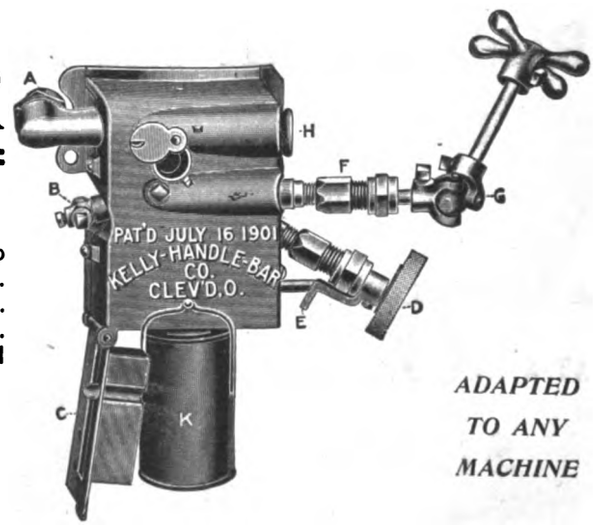
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THE NEW

KELLY GENERATOR

for Steam Vehicles is a Trouble Saver.

No Steam Car is complete without one. Does away with drip cups and all annoyances. Perfected in every way and always reliable. Strongly made with all connections outside. Easily adjusted. No flaring or flashing in lighting, even in the strongest wind. Main fire controlled at seat. Compact and neat in appearance and enclosed in aluminum case.



ADAPTED TO ANY MACHINE



The New One-Piece Steel Tubular Burner

with entirely new casing. Has no gauze or holes in the bottom, the air being taken in from the ends. Absolutely eliminates all danger of fire under-lapping. As there are no air-tubes through the continuous stop-tube the burner even if red-hot cannot back fire. One of the most important improvements yet made. Thoroughly tested—as are all our products. Write for circular.

KELLY HANDLE BAR COMPANY, - Cleveland, Ohio.

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Locomobile



FACTORY AT SEASIDE PARK, BRIDGEPORT, CONN.

Removal Notice

ON April 1st, the Executive Headquarters of the Locomobile Company of America, will be removed from No. 7 East 42d Street, New York, to the factory at Seaside Park, Bridgeport, Conn. Our New York business will be handled at our large repository, Broadway, corner 76th Street, where the various styles of Locomobile cars, both steam and gasolene, will be sold and where we have unequalled facilities for storing, repairing and caring for our customers' vehicles. We also call attention to the fact that we store and repair electric machines as well as steam and gasolene. Visitors will be welcome at all times at our factory. It is the finest automobile plant in the country.

The *Locomobile* Company of America,
BRIDGEPORT, CONN.

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THE FOUNTAIN OF YOUTH
IS AT

French Lick Springs

IN THE HIGHLANDS OF SOUTHERN INDIANA,
ON THE

MONON ROUTE
CHICAGO, INDIANAPOLIS & LOUISVILLE RAILWAY

Pluto Spring is a veritable fountain of youth. It arouses the torpid liver, renews the vigor, and makes a new man of you.

New Modern Hotel, all outside rooms, accommodates 800 guests, under the management of Thomas Taggart, formerly of the Grand Hotel, Indianapolis. Excellent cuisine.

GOLF, HORSEBACK RIDING AND ALL KINDS OF OUTDOOR SPORTS.

Excursion rates from all parts of the country. Send for illustrated booklet.

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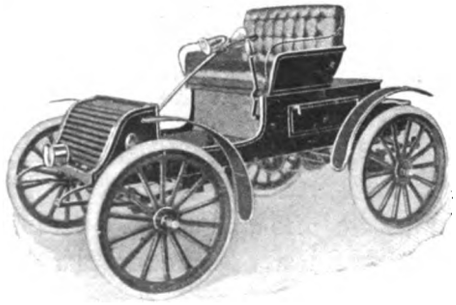
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The FRIEDMAN ROAD WAGON.

The only double cylinder road wagon selling for $750.00.

QUICK DELIVERIES. **AGENTS WANTED.**

COMPARE
Appearance,
Accessibility,
Easy Riding,
Easy Control,
Compactness.



Write for Catalog.

FRIEDMAN AUTOMOBILE CO.
3 East Van Buren Street, CHICAGO, ILL.

A HAPPY AVERAGE

of speed, comfort and reliability is provided in every

Rambler



TOURING CAR.

So simple that a child can use it, so strong that work won't hurt it, and with a speed limit in excess of the law. Let us send you our catalogue W describing it?

THOMAS B. JEFFERY & CO.,
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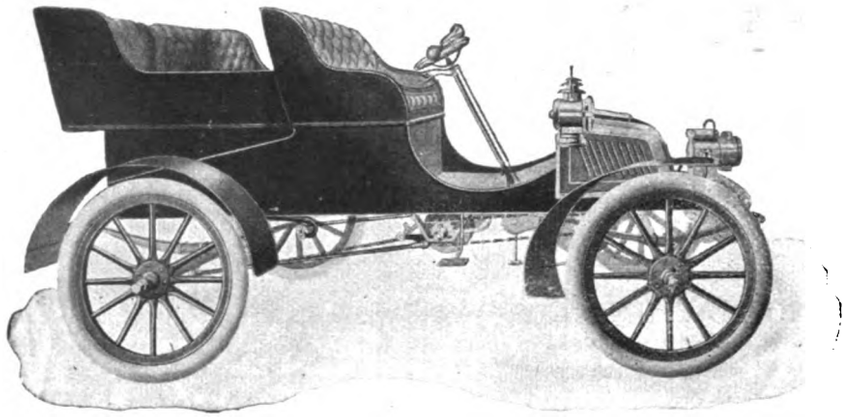
We are not included in **THE GET-RICH-QUICK CONCERNS** identified with the automobile trade.

WE ARE NOT LOOKING FOR "ALL THERE IS IN IT."

WE ARE BUILDING NOT ALONE FOR TODAY, BUT FOR TOMORROW.

The 7 H.P. ELMORE Runabout and 10 H.P. ELMORE Touring Car

ARE OFFERED AT REASONABLE PRICES AND BETTER CARS CANNOT BE HAD FOR AN AMOUNT OF MONEY.

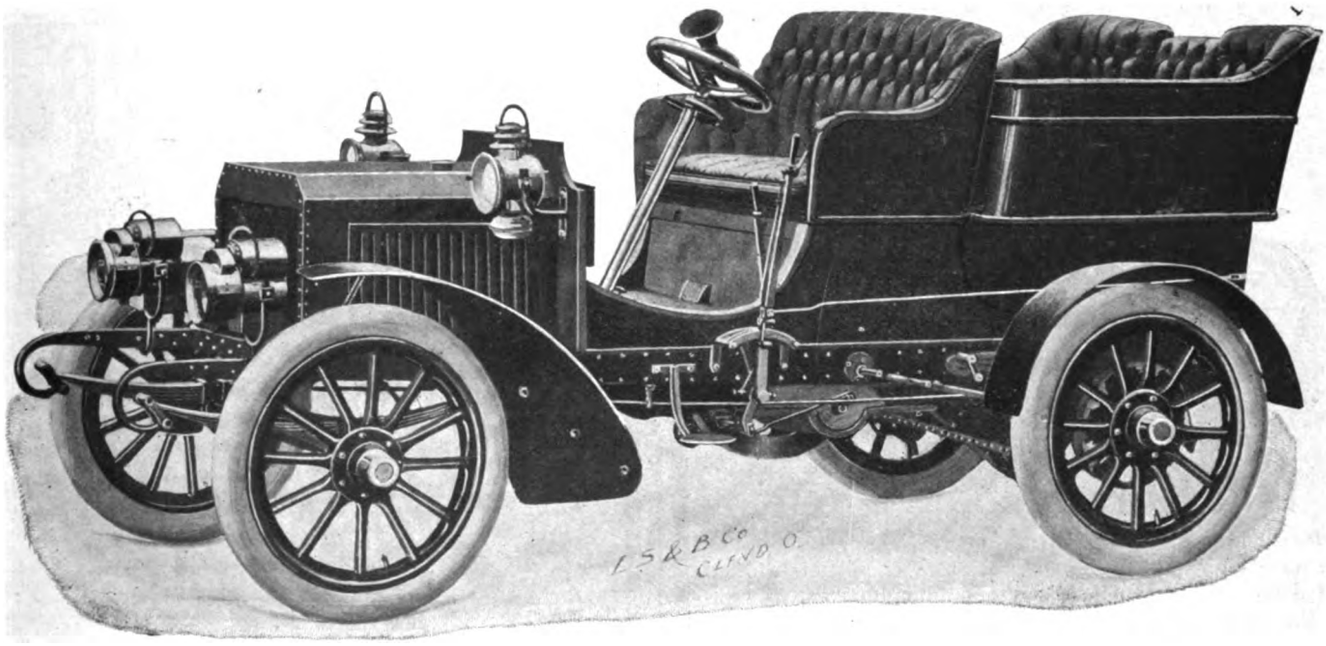


WILL YOU TAKE THE TROUBLE TO INVESTIGATE?

ELMORE MFG. COMPANY, - Clyde, Ohio.

THE STEARNS CAR

Received a lot of very favorable comments at the show.



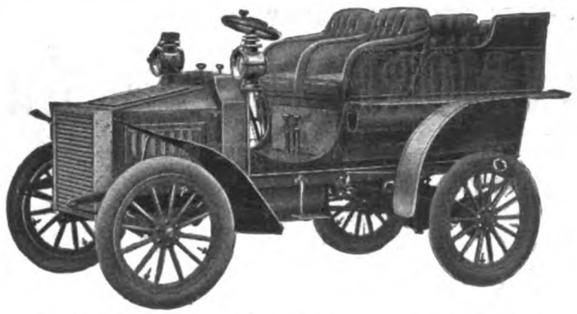
The style and general design is right. The motor is powerful, with a perfect throttle, and runs silently and with no vibration. The attachments on the dash and controls at the wheel are good points, too. The small tube radiator is ahead of the time, and considering all things, **STEARNS CARS are worth more than they cost.**

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The NEW WHITE STEAM TONNEAU for 1903



AN AUTOMOBILE THOROUGHBRED.

The White Steam Motive power has made records in reliability contests, in races, and in every-day use which speak for themselves.

Write for full particulars, diagrams of engine, experts' reports and official results of important endurance contests.

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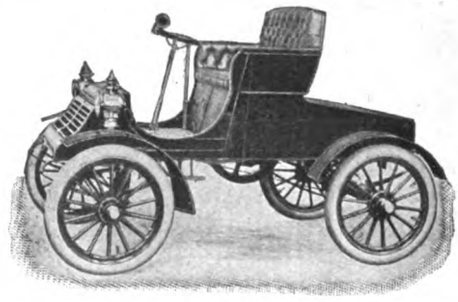
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AMERICAN GASOLENE AUTOMOBILE



Why not look into the matter, and get the most solid comfort possible at a minimum cost? You wont regret it. The best material money can buy goes into the construction of this GUARANTEED SUCCESS.

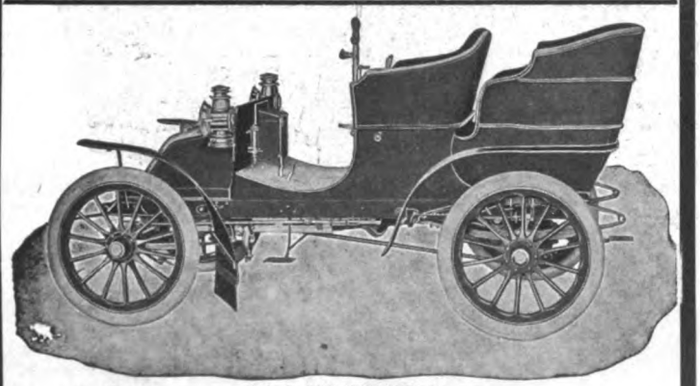
You will be interested in terms to agents. Write for catalogue.

THE AMERICAN MOTOR CARRIAGE CO.,

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10 H. P. GASOLENE MOTOR.

Is a Harmonious Whole.

Its success does not depend on any one feature, but is the result of a perfected combination of exquisitely worked out details. The most satisfactory automobile production of the year and the price is equitable. Full information and catalogue upon application.

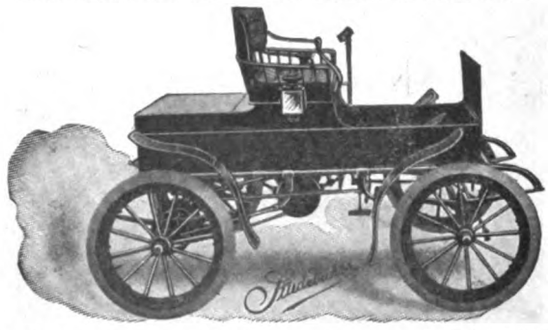
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NO EXPERT CHAUFFEUR NEEDED.

Can be Run Any Day in the Year, by Any Member of the Family.

Wide Touring Radius. A Successful Hill Climber. Smooth Operation. Reliable Brake Control. Great Strength of Construction.



Descriptive Catalogue on Application. Can be seen at the Following Repositories, where we also show a full line of the celebrated vehicles and harness.

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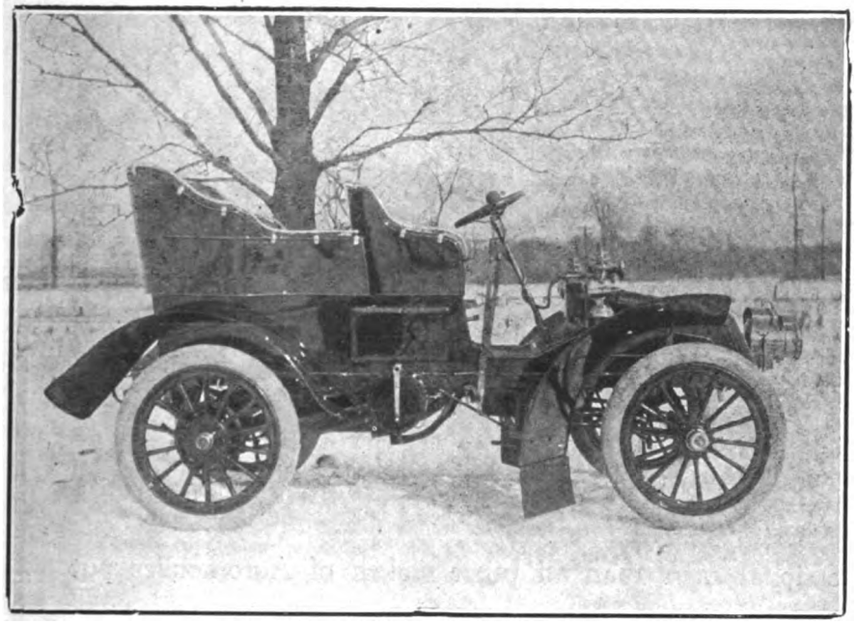
John Wanamaker, New York City.
H. G. Martin & Co., Providence, R. I.
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First-Class Agents Desired in Territory not already Covered.

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Advice he gave his friends:

"I came to the conclusion that the single cylinder machine, built by the Ohio Automobile Company, Warren, Ohio, known as the Packard Model C, most fully covered the points required. I requested this company to build for me such a model, and at the same time I advised ten or more of my friends to place their order with the Packard Company for a similar model. All these vehicles have been in constant commission from that time to the present, with a few exceptions they still belong to the original owners. Such as have changed owners have brought prices very near the original cost, and they are to-day giving perfect satsfactioin in every detail"

"ASK THE MAN WHO OWNS ONE."

Seats Five People. **$2500.**

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Packard Motor Car Company,
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THE POPULAR GASOLENE CAR
Century Tourist

IS ACKNOWLEDGED TO BE

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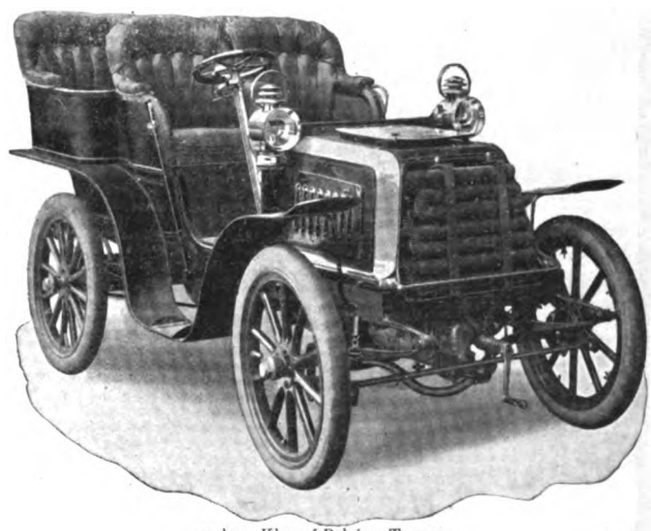
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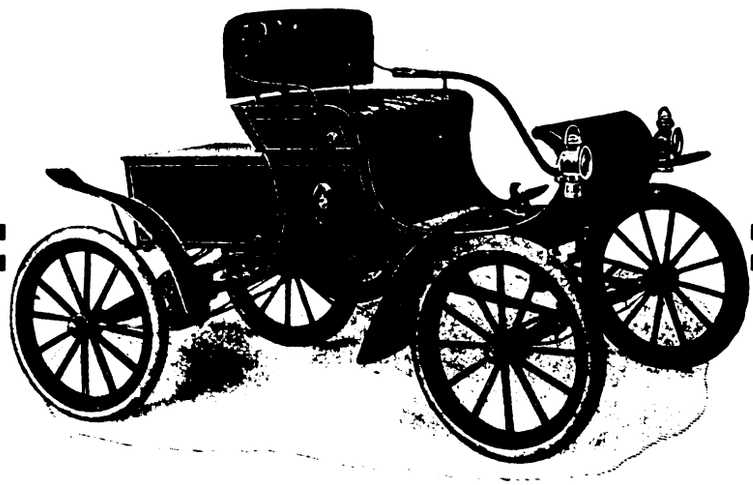
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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS.

Volume V. New York, U. S. A., Thursday, March 26, 1903. No. 26

NEW JERSEY BILL PASSES

Amendments Favored by Automobilists Accepted by Legislature—The Law in Full.

By the passage in the Senate last week of the so-called Scovel bill, and the affixing of Governor Murphy's signature thereto on Monday, New Jersey now possesses a law that is as simple and equitable as any legislature can be expected to pass to-day. In some respects it bears hardly upon motorists. But in the main it justifies the pronouncement of the Automobile Club of New Jersey, which organization, with W. E. Scarritt at its head, did the lion's share of the work of having the law placed on the statute books. That pronouncement is that the act is, both from the standpoint of road protection and from the viewpoint of the automobilist, a modern as well as scholarly scheme of automobile legislation.

The bill requires the registration of all automobiles with the Secretary of State—those of non-residents as well as those living in New Jersey—and the carrying of numbers on the vehicle and on the lamps. The fee is $1. These formalities complied with, no others are required; there is no licensing and no interference by local authorities, except on speedways and in parks. There local regulations apply. Arrests for violations of the law shall be made only in case racing is indulged in. For other offences complaints must be lodged with magistrates, and the latter shall conduct a trial. An appeal from their decision may be taken before the county courts.

The speed provisions of the bill were given in these columns two weeks ago. They are twenty miles an hour in the country, eight and one-half miles (one mile in seven minutes, to be exact) in cities and towns, and ten miles at crossings and sharp turns in the country. These rates are uniform throughout the State, and cannot be nullified by local ordinances.

The bill in full follows:

AN ACT defining motor vehicles and providing for the registration of the same

(Continued on page 995.)

Discontinues Motor Manufacture.

The Motor Vehicle & Power Co., Philadelphia, have discontinued the manufacture of motors. They have leased the building at Sixteenth and Wood streets formerly occupied by Banker Bros, and will conduct an automobile sale and storage business. Arrangements have been made to handle the Cudell cars, and the Darracq line will probably be added also.

Dyke Becomes a Company.

To properly look after the expanding business of A. L. Dyke, St. Louis, Mo., a corporation has been formed to take it over. The A. L. Dyke Automobile Supply Co., Inc., is the title of the new concern, of which A. L. Dyke is president. The business will be conducted as before, but on a more extensive scale.

Moore to Quit Westfield.

The C. J. Moore Co., Westfield, Mass., is considering the advisability of discontinuing the automobile business. President Moore has resigned, and will leave the town, hence the probability of the action referred to. The directors will meet shortly and come to a decision.

Joyce Joins the E. V.

J. J. Joyce, former manager of the International A. & V. Tire Co., has engaged with the Electric Vehicle Co. Before going into the tire business he was connected with the Electric Vehicle Transportation Co., so that he is not an entire stranger to his new duties.

Typhoid Attacks Morrison.

A. E. Morrison, who so recently left the Peerless factory at Cleveland to assume charge of the company's new branch in Boston, is down with typhoid fever. The attack is not a severe one, however, and no bad results are expected.

Mc Murtry With Berg.

The forces of the Berg Automobile Co. have been strengthened by the acquisition of A. L. McMurtry, of the late firm of Adams & McMurtry. Mr. McMurtry will divide his time between New York and Cleveland.

PLANS OF THE CHAUFFEURS

Private Car Men to Separate Themselves From Operators of Hacks and Organize.

The chauffeurs have been having a hard time of it getting together in harmonious organization, but the proper plan seems at last to have been hit upon. This is that of a few men of the first class variety organizing as an incorporated club and formulating the examinations to be passed by those who desire to join. This seems to be the only way out of the difficulty because the crowd present at a mass meeting is of too mixed a character to permit of agreement on the grading conditions. The unqualified men would not agree to strict examinations, and unfortunately the unqualified are always in a majority at a mass meeting. So this is the solution to the problem that has been decided upon. The success of the plan depends upon the character of the incorporators and of the examination prepared for members. If these have the approval of the Automobile Club of America and the National Association of Automobile Manufacturers the incorporated club can "stand pat" and the chauffeurs will be practically obliged to join.

Another subject that agitates the chauffeurs just now is that regarding the name by which they shall be known. They are weary of the imported misnomer chauffeur, because it is imported, because it is not descriptive, because it is used here to mean the hired man, while in France it applies to the gentleman operator, while the hired man is called a mechanician, and, finally, because while the modern meaning of the word is stoker, some of the men have learned that earlier it meant robber. It has been proposed to substitute the term "automobile engineer" for "chauffeur" and call the organization the "National Association of Automobile Engineers," or some such name.

These things have developed since a mass meeting that was called and held last week at the Mobile station at No. 1,713 Broadway. The call for the meeting stated that it was

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for the purpose of forming a club. A few active spirits, notably Van Allen Soule, E. E. Hawley and Samuel Brock, conceived the idea of having a club in which the members would be divided into four grades, according to ability and experience.

About eighty were present at the meeting, and Joseph Kane, chauffeur for William Guggenheimer, was elected temporary chairman, while L. H. Warren was chosen temporary secretary. There were some decidedly humorous passages at the meeting, and a wonderful absence of parliamentary procedure, but there was an earnest tone to it all that boded well, although there was a manifest feeling of antagonism on the part of the men who operate private cars toward those employed on public vehicles.

After a discussion the following were named as a committee to draw up "resolutions" showing a plan for a club, not on the lines of a trade union, the union idea being honestly repudiated by all: E. E. Hawley, Van Allen Soule, Samuel Brock, Fred Rankin and W.. Van Vahn.

After this committee had been appointed suggestions were invited, and it was agreed that a tentative constitution and set of by-laws which had been prepared by the promoters of the meeting should be read without interruption. After the reading these were loudly applauded, and as they were drawn up by the same coterie of men who later mapped out the independent move, they are fairly indicative of what is the plan of organization.

Excerpts from this tentative constitution and by-laws follow:

The name of this club shall be the "American Chauffeurs' Club."

Its object shall be to promote the chauffeurs' profession by their examination and classification according to their ability, experience, reliability and integrity; and the issuing of certificates to its members by a competent board showing to what grade the holder belongs, thereby making it necessary for a man to be fully qualified for a position before the club will recommend him for a place. By so doing the club hopes to instill into its members the desirability of constantly striving for a first-class certificate, and at the same time protect the automobile owners against imposters and men who are incompetent to fill positions of trust.

A Board of Governors shall be elected at the annual meeting consisting of ten members in good standing, in addition to the President, the officers of the club forming six members of the board.

The President shall appoint a Committee on Credentials, consisting of five members holding first-class certificates. This committee must be ratified by the Board of Governors. Should any nominee be rejected the President will submit another name to the Governors for their approval.

The Committee on Credentials shall pass upon all applications for membership, and upon their recommendation only shall an applicant be eligible to membership, his classification being fixed by the committee.

The Board of Governors by a majority vote may elect applicants to membership who have been passed and recommended by the Committee on Credentials, provided they are over twenty-one (21) years of age.

The President will have issued to all members a card properly indorsed, showing to what grade such member has been admitted.

The dues will be five ($5.00) dollars per year, payable in advance.

The Board of Governors will have the power to suspend either temporarily or permanently, any member they may deem obnoxious to the general good of the organization; providing, however, that charges have been formally made in writing against such member and notice sent him of such charges and an opportunity given him to be heard upon said charges, if he so elects.

The Corresponding Secretary will keep on hand at all times a correct list of all members, their grade, &c., and will, upon application from an automobile owner, supply the names of all men desiring positions who are, according to their grade shown by their certificates, fitted to fill the position open.

It will be necessary for the applicant to state his experience fully. Whether he is a machinist or not. Whether he drinks to excess. Whether his eyesight and hearing are good.

He must also furnish a list of the persons he has worked for, the length of time engaged by each, class of car operated, and cause for leaving.

The Committee on Credentials will investigate each applicant according to his own statement and will satisfy themselves that the applicant's claims are founded on fact. They will then satisfy themselves as to his ability before recommending him to the Board of Governors for a given grade of membership.

A member may stand examination for a higher grade every three months. If he fails to pass, he cannot again try examination for a similar period.

The Governors may, by a two-thirds vote, elect as honorary member any person who has been of unusual benefit or service to the American Chauffeurs' Club or the cause of automobiling. Such members will enjoy all the rights of a first-class member except that of voting.

The meeting adjourned to meet again and receive the report of the special committee appointed on Wednesday night of this week at the same place, but no sooner was the meeting over than the new movement referred to was inspired by the talk of dissatisfaction on the part of the private car men. This culminated by having papers of incorporation drawn up with the intention of having the committee that was appointed report back that they now represented an incorporated club, and that those who desired might apply for membership.

The reason for this action on the part of the leaders was expressed by one of them as follows:

"We do not want that transportation crowd with us, nor any of the men who are simply electrical operators. Their interests are not the same as ours, and no satisfactory organization could be perfected in open meeting, because they would not permit the adoption of any plan of grading that would put them in a lower grade where they belong. The electrical operators are not mechanics or engineers, but simply push button men. They have only to know enough to pull a lever and steer and read a gauge clock. They do not have to be mechanical any more than an elevator man. A man who can run a big four cylinder gasolene car and take care of it properly in the stable and on the road has got to be an engineer, just as much as a man on a locomotive, and they should be called automobile engineers. The electrical men belong in another class. They could not pass an examination, such as should be fixed upon for members of the first grade, and if allowed to have their say in a meeting where they are in a majority the whole thing will be a fizzle. It is easy to pick out ten or a dozen good men who really are thorough engineers and mechanics, and who have had years of experience with automobiles and can pass any sort of an examination. Let them get together and incorporate a club, and after the conditions of grading have been fixed and the automobile club approves of them, why the other men can come in or stay out as they like. They will have to accept the grading condition if they come in, and it will be their own loss if they stay out. The conditions for the first grade should be very strict. A man to be eligible should be able to prove at least a year of experience as a mechanic and a year of experience in handling a machine. He should be obliged to pass a rigid examination of questions concerning the parts of the machine, should be made to prove that he not only can steer and drive one, but can set up, adjust, oil and put into working condition a machine that has been fixed up for him by the committee. Then after the practical examination there should be one of theory. I say theory, but I don't mean what many men may think; no text book questions or anything like that, but a suppositious case to a man of an accident on the road and ask him what he would do under such conditions. He would not have to have 100 per cent on this feature, but he should be able to show that he would know what to do in an emergency. The theoretical questions of this sort could be framed up from the experiences of the examiners. For instance, it is often possible to get a broken machine home instead of leaving it in a shop or putting it on a train, if only as man knows enough about the engine. I know I broke a connecting rod, but I knew how to strip the engine enough to run home on two cylinders, while the boss took the train. Ability to do such things saves time, trouble and money."

Florida Races "Go"

Just when the situation seemed most unpromising for the Florida automobile races the sky cleared and obstacles disappeared as if by magic. W. J. Morgan, promoter in chief, returned from the West, and almost simultaneously W. J. Stewart, chairman of the race committee of the American Automobile Association, took action in the matter of a sanction for the races. The Florida Automobile Association and the Daytona Automobile Club were granted a joint sanction for a race tournament on the Ormond-Daytona beach on March 26, 27 and 28. This ended a struggle between the two clubs, and both will co-operate in the promotion.

The programme will include a floral parade, trials against time and races, both automobiles and motor cycles participating. The appearance of Alexander Winton, with his famous "Bullet," is assured, the car having been shipped to Daytona last week, and a number of other flyers are expected to be on hand and take part. Strong efforts will be made to replace the present mile record of 46 seconds with new figures, and it is thought that on the smooth beach they will be successful.

There is no truth in the report that an Oldsmobile racer has been built. The Olds Motor Works write the Motor World to this effect, adding that they "have not time to take up anything outside of our regular line."

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BUDLONG ON CONDITIONS

No Clouds on Trade Horizon, He Says, and Exports are Expanding Encouragingly.

With his habitual courtesy Vice-President and Treasurer Budlong of The Electric Vehicle Co. replied at some length to the question as to the season's outlook put to him by a Motor World representative last Saturday during one of his visits to this city.

"The outlook is a splendid one," he said. "We are far ahead of last year, our order books show, and our only anxiety is as to turning out the goods fast enough. The vehicles are coming through in good shape, and in a few weeks our output will be much increased. Our trouble is that there is so much special work. Many of our customers want their broughams or coupes or laundaus built with some special features of their own incorporated, and they feel that when they pay $3,000 or $4,000 they should get these. But we are doing our best to cope with the influx of orders we have received, and really have no reason to complain.

"How about Columbia gasolenes? Well, we shall have a sample car here before very long, anad others will follow fast, as there are forty cars coming through together. After that, of course, the task of turning them out will be a much less difficult one, for everything will be going smoothly in the gasolene department, and the work will come through much more rapidly.

"So far we have made no real effort to sell gasolene cars. The comparatively small number we shall build this year will be disposed of without any difficulty."

"Our foreign trade in electrics has been very good this year, too. We are making large shipments of gears—you know, we send the vehicles abroad without bodies—to England regularly. The electric type is much in favor there, and our sales amount to hundreds of thousands of dollars annually. In France our trade is not quite so good. French automobilists incline more toward the gasolene type of car, and the electric has a much more limited sale. Still, our agents in Paris do a good business for us, and one that is steadily growing."

Electric Storage Battery Affairs.

Last week the annual meeting of the Electric Storage Battery Co. was held, and P. A. B. Widener, William L. Elkins, Thomas Dolan, George D. Widener, Rudulph Ellis, Grant B. Schley, George I hiller, Thomas J. Regan and Herbert Lloyd were re-elected directors. The sale of the Derby Lead property and the purchase of the Chloride Electric Storage Battery Co., Ltd., of England, were ratified. President Lloyd denied that agents of the General Electric Co. had ever looked over the plant of the Electric Storage Battery Co., and said that the subject of the absorption of the Storage company by General Electric had at no time been considered by the directors.

The president mentioned incidentally that the Storage company during 1902 had done nearly 95 per cent of the battery business of this country. It also transpired that the company owns about one-third of the stock and the same proportion of the bonds of the Pennsylvania Electric Vehicle Co.

The most important matter brought out at the meeting was the plans of the Storage Battery Co. for the development of the Chloride Electrical Storage Co., Ltd., England, which has been recently taken over.

Turner! Turner! Who's Turner?

Business men of Geneva, N. Y., are agreeably exercised over the possible location of a $1,000,000 automobile factory in their midst. The secretary of the Chamber of Commerce is investigating a proposition presented by Charles E. Turner, of Brooklyn, relative to locating the plant.

Mr. Turner was in Geneva and informed the directors of the Chamber of Commerce that all that would be asked of Genevans will be to subscribe for from $15,000 to $20,000 worth of the stock. The remainder, he asserted, could be secured in New York.

The officers of the Chamber of Commerce will investigate the subscription of the stock and also make arrangements for the meeting of incorporation.

And Decker! Who's Decker?

The Binghamton, N. Y., Board of Trade has under consideration an offer from the Decker Automobile Co. to establish an automobile factory in that town. The Decker company asks that Binghamton capitalists subscribe $20,000 to a stock company. They will put in all the machinery for the plant, which will aggregate in value $10,000, as their part of the stock. They do not ask for a site, but wish to secure a machine shop which is already equipped.

Vindex With one Million.

The Videx Automobile Mfg. Co., which was recently incorporated under the laws of New-Jersey with $1,000,000 capital, has purchased the land, buildings, stock and business of the Marlboro Automobile and Carriage Co., at Marlboro, Mass. Orrin P. Walker, of Marlboro, who was the head of the latter concern, is president of the new company. Work will be prosecuted on a much larger scale than before.

Have Purchased Motsinger's Patent.

The Standard Motor Vehicle Co., Chicago, whose four cylinder horizontal engine has given rise to some little comment, has purchased of H. N. Motsinger, Pendleton, Ind., a patent on a multi-cylinder horizontal motor which he owned, and which, with their own, they maintain, places them in control of that type of motor. The chief claim for this form of engine is its freedom from "poundnng" and other vibration.

EFFECTS OF ALTITUDES

How Rocky Mouutain Air Affects Motors and the Constructional Changes Made Necessary.

Denver and the Rocky Mountain country thereabouts, as was remarked in the Motor World last week, make peculiar demands on motors.

Denver has an altitude of 5,280 feet, but most of the automobiling is done at an altitude of about 5,800 feet, which corresponds to the barometric pressure of 24 inches instead of 30 inches, as at sea level, a reduction in air density of 20 per cent, which means that a gas engine to have the same compression there as at sea level should have the area of the clearance or mixing chamber reduced 0 per cent, and that wherever valves or floats are lifted by partial vacuum instead of by mechanical means their weight should be cut down 20 per cent. At an altitude of 5,800 feet the boiling point of water is only 201 degrees Fahrenheit, instead of 212, as at sea level, which indicates that the cooling surface of the radiator or amount of water should be increased 5.2 per cent to obtain the same reserve cooling effect that you would have at sea level.

In crossing the divide between Denver and Colorado Springs, which has an altitude of nearly 6,000 feet, many of the best cars have all they can do to climb the grade, due to loss of power from decreased compression and improper mixture, due to too heavily weighted floats.

Walker is Opposed to it.

The name of John Brisben Walker has been connected with the bill introduced in the legislature of this State by Senator Foley, giving privileges to companies operating stage lines. Mr. Walker writes the Motor World stating that he is "utterly opposed" to this bill or any other giving exclusive privileges on State highways. He thinks these highways should remain open to those who can give the best service.

Big Japanese Company Formed.

The Japan Automobile Co., with a capital of $500,000 (1,000,000 yen) has been organized in Tokio to operate a public bus line. Several wealthy merchants of the city are interested in the enterprise, which may eventually go into the assembling of cars. The company has not yet decided what power it will employ, but has an agent in this country who is investigating the subject.

Removes to Bridgeport April 1st.

As was stated some weeks ago, the Locomobile offices in this city will be closed on April 1. President Davis, Advertising Manager Kingman and the major part of the force will go to Bridgeport. Treasurer Thomas H. Thomas, with the accounting department, will take up quarters at the salesroom and garage at No. 126 West Seventy-sixth street, this city.

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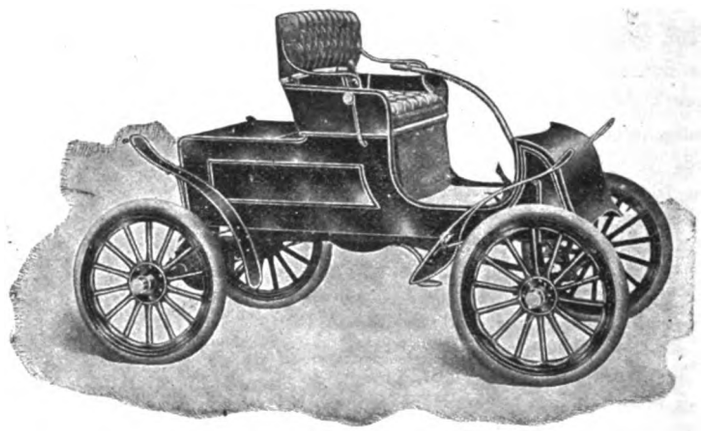
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NEW YORK, MARCH 26, 1903.

The Matter of Garage Charges.

With the approach of the touring season the matter of garage charges, and particularly those for storage alone, assumes importance and timeliness.

It is undeniable that there is a very general disposition to regard automobilists as fortunate persons, plentifully supplied with this world's goods. The widespread appellation of "millionaire automobilists," applicable to the few, is made to serve for the many. Lavish expenditure is in consequence expected, and sometimes demanded. Prices double or quadruple, and the motorist who becomes restive under them is looked upon as a "cheap skate," who has broken into a game that should be given over to "his betters."

Such is the belief entertained outside the "charmed circle" of automobiling. It is even shared in some degree by those inside. The "tariff" for ordinary people is deemed too low for motorists. A lordly disregard for money is one of their supposed attributes, and in many quarters care is taken that it is lived up to.

If we turn to garages we find that this is true in the main. The driver of a horse drawn team can put up at a livery stable, and, although charged transient rates, get off with a charge of 25 cents for storage. Attendance and supplies are charged for at proportionate rates. Fixed rates prevail as a rule, and if they are sometimes increased the additional impost is so slight as not to be seriously felt. Tip schedules likewise vary very little, if any.

But turn to the automobile, and it is found to be quite another story. Up, up go the rates, and if the tips are not given out on a liberal scale the motorist is looked upon as a niggard, and is lucky if he is not openly reviled in consequence. He gets no 25 cent storage rates, even if, in the absence of a regular garage, he puts up at a regular livery or in some outhouse connected therewith. Rarely will he get off with less than $1, and sometimes the owner has the effrontery to demand more. In so doing he simply follows the example of the garage proprietor. The practices of the latter are familiar to the former; and for poor accommodations the motorist pays the price of good ones.

As to the garage practices opinions must differ regarding them. Is $1 an excessive sum to charge for keeping an automobile overnight, supplies and attendance being extra? Judged by livery stable practice, the standard charge being 25 cents, it is exorbitant. But in view of the extra expenses of the garage keeper, his high insurance rates, his more limited and fluctuating patronage, etc., this is not so obvious.

It will scarcely be disputed, however, that a $1 charge is ample. Yet we have known $1.25, $1.50 and even $2 to be demanded and obtained, with other charges in proportion.

These and other garage problems confront every motorist who makes use of them as transients. He finds that treatment differs, but that he gets the worst of it in nearly all cases. He is certain sooner or later to demand a reform. A wise course would be to forestall the demand.

Why the Commercial Contest.

The Automobile expresses guileless wonderment that the Automobile Club of America should persist in its promotion of the commercial vehicle test despite the disapproval of the National Association of Automobile Manufacturers.

What has caused more wonderment to nearly all other papers and people was the action of the Association in disapproving the test after several of its leading lights had responded to the club's courteous invitation and promised their support and approval.

The Automobile also appears to fear that the contest may not be sufficiently technical, which, to our mind, is one of its virtues. At this stage of the industry nothing is to be gained by too-exhaustiveness. The rules as drawn are ample to meet present conditions. They will abundantly meet the chief purposes to be served—the drawing of public attention to the automobile for commercial uses and forcing the trade generally to do more than reduce the motor wagon to blue print designs.

The commercial vehicle is the bulwark of the trade. In turning on the invaluable light of publicity and in forcing the fact down the trade's throat before the trade is ready to swallow it, the Automobile Club is helping the trade in spite of itself and performing also a genuine public service.

Boston's and Other Local Shows.

A striking lesson is afforded by contrasting the recent local show in Boston with others held in other cities. In Boston the dealers formed an association and ran the show themselves. They advertised liberally in the local papers, engaged an able press agent, and the consequence was that the whole city was stirred up with automobile talk. Interest in the motor vehicle had been somewhat lagging in the Hub until this spring, but during the show of the dealers' association there last week the automobile was the subject uppermost in social and business circles, as truly as it was in New York during the week of the national show.

The advertising and the consequent news notices aroused the interest of the whole city. Because the papers were full of it the show became the big event of that week for all the smart people of the city. When the doors opened on the first night there was a crowd of fashionable people waiting to enter Symphony Hall. Persons of wealth and fashion continued to go to the show all the week, the interest waxed up to the buying point, and many machines were sold.

When the show was over it was found that all the exhibitors had done a fair business. They were more than repaid for their outlay of cash for advertising and exhibition space, and also for their time and trouble.

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Besides the immediate business done, a new interest in motor vehicles was aroused which will bring a steady flow of business all the rest of the year. On top of these things was the fact that a handsome profit had been made by the dealers' association, to be divided pro rata among the members or used by the association to further promote automobile interests in Boston.

Compare a show of that sort with some others that have been run by individual promotors in some other cities—it is unnecessary to mention names. The promoting persons were on the scent of private "graft." They would not spend any money of consequence in advertising, and they did not inspire the dealers with enough confidence to lead them to be liberal in this respect, although the dealers wanting a show were easily induced to buy space. What was the result in this case?

There was a poorly attended show. If not absolutely "frosty," there was a lack of warm interest, of the buzz and stir that inspire both buyers and sellers. The business done was small, no lasting impression of the progress of motor vehicle making and using was effected, and the show closed with the promoters gloating over a small profit, the dealers wondering whether it had paid them to go in, and more than half the city unaware that anything of note had transpired.

The public exhibition must be heralded to the public, and well heralded. In these days of extensive advertising, printers' ink should be spread liberally to make automobile shows a success. You cannot get something for nothing, and to get out a crowd to an industrial exhibit a big stir about must be made. This can be done if the dealers unite and run the shows. It is to be remembered that getting the public to pay an admission to see the cars is considerable of a stroke of finesse, because it is so much like a storekeeper charging customers entrance money to his shop. An event must be made of the show, and this cannot be done by individual promoters. The dealers themselves should run all local shows. They should spend money liberally in making them successful, and then have the profits to reward them for their enterprise and sagacity.

Solving the Chauffeur Question.

Ever since the timely expose of the chauffeur problem by the Motor World two weeks ago, the subject has been the one uppermost in automobile circles in New York city. The good done by the threshing out of the question by this paper has been made plain by the activity now manifest in efforts to solve the problem.

As a result of the rapid developments of the last fortnight, a rare opportunity is offered right now for a partial solution of the matter. It is rarely that any such chance has been offered for employers and employes to unite in an amicable shaping of their mutual interests.

The chauffeurs, or automobile engineers, as they prefer to be called, have discarded all idea of forming a union and are anxious to organize in a way that will permit of their being assorted into grades according to ability. This is something wholly commendable. It is to the interest of automobile owners who employ chauffeurs that this should be done. It is to the interest of automobile manufacturers that this should be done. The Automobile Club and the National Association of Automobile Manufacturers should take active parts in helping to launch this organization on lines that will be of benefit to all.

If properly formed an association, such as the men now propose, would go a long way toward taking the place of the schools for chauffeurs that have been considered desirable. In fact, such an organization would be a school for chauffeurs. The men in the second, third and fourth grades would be schooling themselves to get into the grade above. They would be helped by their friends higher up to qualify for higher grades. There would be an unusual and a constant incentive to self-improvement.

The great thing necessary is that the requirements for first grade, second grade and lower grade men should be sufficient to satisfy the owners and the manufacturers, and that there should be assurance of the examinations for the various grades being thoroughly conducted. If this was to be relied upon, the owners could unhesitatingly take a man of any desired grade for a place and be certain of what they were getting.

The way to insure these satisfactory conditions would be for the owners and makers to be actively identified with the organization by representation. The men seem willing and anxious to have the support of the club and of the manufacturers. These organizations should have committees co-operating with the men. The examinations proposed for the various grades should be officially approved by the club and the manufacturers. The owners and makers should have a representation on any examining committee, in order that there never could be any question of a man holding a first grade ticket in the association when he was not entitled to it. This would be true co-operation and beneficial to all. The men have shown themselves willing to seek the approval of the owners and the makers. It is to the interest of the latter that it should be given. The men will co-operate if the club and manufacturers will. It is a rare opportunity.

In order that the organization may be properly launched a joint committee from the club and the N. A. A. M. should be formed at once to work with the organizers. The incorporators themselves should be graded by passing an examination before a board composed of men selected jointly by themselves and the joint committee. Then if only first grade men were eligible to hold office and if the joint committee of the N. A. A. M. had representation on the "Credential Committee" it should be an ideal co-operative body of "capital and labor."

It is a rare opportunity.

Not the "Best and Fairest Bill."

In emphatically proclaiming the bill just passed by the New Jersey Legislature as "the best and fairest automobile law in the United States," Mr. W. E. Scarritt, who resides in New Jersey, is evidently carried away by state pride. As a matter of fact the "best and fairest law" is easily the one that prevails in Connecticut. It does all and more than the Jersey bill does, and in just about one-tenth the number of words. None should permit Mr. Scarritt's over-enthusiastic praise of the New Jersey measure to influence them into accepting it as model automobile legislation, for it is nothing of the sort. Connecticut's is the only really sane law in the United States, if not in the world.

With the coming of the noiseless gasolene car, which is confidently predicted, automobiling will be minus one of its picturesque features. The regular chug-chug of the exhaust has become almost a part of the vehicle, and unless it is particularly noisy it is not regarded as disagreeable.

Spring deliveries are still belated, although some shipments are being made all along the line. If the expected rush of buyers materializes it will tax the factories to meet it, even though they have cars "coming through" in big bunches.

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Commentary

Of course you have all had enough and a plenty of show stories, but here's a good one which has but just reached me, and I don't want to keep it until show time next year, so tell it now. A certain manufacturer, whose opinions of newspaper men is none too flattering and who has always refused to give them either countenance or advertising, was talking to another man in the trade during the recent Chicago show. "How is it," said the non-believer in the newspaper confraternity, "that you and your machines are constantly being kept before the public? I hired a man who said he could do it for me, paid him $50 per week to do it, and I'll be hanged if I ever got five dollars' worth of notice. I'd like to know how you manage it."

"Well," said the second man, "I'll tell you. You see, I know all of the writers and when they come around I generally try to have a bit of news or a cigar for them, and whenever I can I give them an advertisement. When they can return the favor they do so, and there you are."

The first speaker thought awhile and then confided to the second one his desire to change his tactics at least during the time the show was on, and an agreement was made then and there for a meeting between the erstwhile press despiser and the despised pressmen. As soon as this had been accomplished the manufacturer whose advice had been sought looked up some of his friends among the writers, and there was a lot of whispering and smiling done between them.

Promptly at the time set the manufacturer who wished to win over the newspaper men was on hand and was introduced to eight of the leading press representatives. After a few common places the seeker after the pressmen's favor asked the writers if they wouldn't have some cigars and they declared they would. Here was where the plot thickened. Over to the hotel cigarstand stalked the ten, and the host invited his guests to chose their own brands. Strangely enough the cigar man seemed to know just what was wanted, and the box he placed before the newspaper men had about as fat and as black cigars in it as anyone ever saw. Each man took one, though none seemed anxious to light up, and on one excuse or another thanked their host and strolled off, leaving him still talking to the manufacturer who had brought about the happy gathering. Putting his hand in his pocket the man who thought he had won the publicity makers over at the price of a cigar each, said to the man behind the counter:

"How much do I owe you?"

"Ten dollars," was the answer.

"What! Ten dollars for ten cigars?"

But there wasn't any good kicking, the newspaper people had each taken a dollar cigar and the host and his friend were also smoking one of the same expensive kind. The buyer of publicity paid; he wasn't happy and he never tried in any other way to capture free press notices. Later on the newspaper men turned in their dollar cigars to the cigar man and received in return for each one of them eight two-for-a-quarter cigars. Some way it seemed as though there was an understanding to that end between the owners of the dollar cigars and the seller of them, but, of course, no one can prove that.

* * *

The man who is eternally kicking about his own troubles is generally the one who wants to ride to glory in some other fellow's conveyance.

* * *

There is none who so thoroughly appreciate the trotting horse owner's modesty and forbearance toward all other users of the public highway as I do. I believe I have made this statement before in commenting on the trotting man's lack of arrogance which one would naturally expect from a man for the sole pleasure of whom a city has set apart a magnificent speedway, and to whose demands first attention is always given on all parks and elsewhere. Any other than a trotting horse owner would be inclined to become, as the late Chief Devery would say, "chesty," over such deference to his importance, but does the horseman? No, indeed; he takes it all as his divine right and lets it go at that. Now, don't think I am prejudiced in this matter, because, of course, I am not, but if you think otherwise here's what the president of the organized trotting horsemen said to his fellow road drivers on the occasion of his recent re-election:

"You are the slowest lot of men organized in the city of New York to-day. Here we are, six hundred strong, and can get the influence of every district leader's vote in this town, and yet we dicker how we'll support our Speedway. The trouble is we don't demand our rights; we ought to be able to make so strong a showing that the powers of the legislature could not refuse our demands. A $4,000,000 Speedway has been left to us to enjoy, but we are afraid to ask what we need to keep it up. Now, I promise you if you will back me up that I will be able to get this coming year a $75,000 or a $100,000 mansion as a clubhouse that will be representative of the Speedway.

It isn't just plain from this whether the city or the State is to give the trotting horse gentlemen this clubhouse so he may rest himself after the hard labor of driving his horse over his $4,000,000 Speedway. But what does it matter? In any event you can see that there isn't the slightest danger of the trotting horse owner ever demanding what he considers his rights, and that, too, when he is absolutely sure of "the influence of every district leader's vote in this town." Now, if for trotting horse you were to substitute automobile in all this, what do you think would happen? War, devastation and sudden death would indeed be mild misfortunes when compared with the things which would be pictured as close at hand by every scare-head editor in the land.

THE COMMENTATOR.

Patching the "Protectors'" Bill.

The bill of the Protective Association of Long Island now pending before the New York State Legislature has at last been tinkered into such shape that President Shattuck, of the Automobile Club, has promised it his support. Besides providing for every automobilist being licensed by the State for a fee of $1, it stipulates that no local authorities may lessen the rate of twenty miles an hour speed in the open country, or fifteen miles an hour in suburban districts where the houses are more than 100 feet apart, or eight miles an hour in built-up portions of cities and towns. Motor cars must stop on signal from horsemen, and when doing so the churches must not be passed faster than eight miles an hour while a session is being held in them, nor may horses or foot passengers on the highway be passed at a greater rate of speed. It provides for suspension of the license for two weeks for a first offense, a suspension of the license for one month for a second offense and revocation of the license for a third offense in addition to fines and discretionary imprisonment. The penalties apart from suspension of road privileges are: First offense, a fine of not more than $50; second offense, a fine of from $50 to $100, or imprisonment for thirty days; third offense, a fine of from $100 to $250 and imprisonment for thirty days.

Cup Race in Ireland now Certain.

News that the bill authorizing the Gordon Bennett cup race to be held in Ireland had finally passed the British House of Lords on Tuesday, was welcomed here, and also the news that the Hon. John Scott Montagu has offered a trophy for second prize in the race. The American team will not go over to capture the second place cup, not a bit of it, but if they should happen to miss winning the first prize by a small margin it will be consoling to have something to show for the effort made. It is cabled also that about thirty miles of poor roads have been cut out, thus shortening the course to just 100 miles. This will be traversed three and a half times, making the race one of 350 miles. The bill permitting the race has now to go back to the House of Commons, which it previously passed, to have the amendments approved, but no opposition is anticipated, and it is practically settled that the race will be held in Ireland early in July. The Automobile Club of Great Britain has recently written a letter to the A. C. A. confirming this date for the race.

To Oppose the Grim Law.

Members of the Automobile Club of New Jersey went to Philadelphia on Wednesday to confer with members of the club there on a campaign in opposition to the odious Grim bill introduced in the Pennsylvania Legislature.

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Boston Show Closes After Six Days of Impressive Success.

Boston, Mass., March 23.—The automobile show in Symphony Hall here closed Saturday night after a remarkably successful and satisfying run of one week. Both promoters and exhibitors, and these were identical, because the show was conducted by the Dealers' Association, had nothing of which to complain.

The committee in charge of the show found that they were "on velvet" before the doors were opened. There was a good deal of "paper" out for the opening night, but on the second day there were 1,000 paid admissions, and this rate of attendance was not only sustained, but bettered as the week wore on. It is probable that a net profit of more than $2,000 was made by the show.

As for the exhibitors, they are more than satisfied; they are happy. A brisk business was done all the week, and not only were there many sales made, but the local interest in automobiling was aroused as it never has been before, and there is promise of much greater business to follow as the result of the show than that which was done at the Hall.

There were about forty demonstration vehicles working outside the hall during the whole week of the show, and so great was the demand on these that it was difficult at any time to book an engagement for a demonstration. A clever exhibition was given one afternoon by one of the Cadillac machines, for which W. E. Eldridge is agent. The operator in the car backed it over the curbstone and up on the steps of the Hall; then he set the brakes and held it there, to show how efficient was the brake power. It was an experiment on the part of the operator, but it succeeded and proved to be an impressive demonstration of reliability.

A couple of social features did much to enliven the week. On Wednesday the committee, represented by Harry Fosdick, the ever affable agent for the Winton cars, made up a party of about twenty representatives of the press and took them in three big cars out to luncheon at Auburndale. It was a jolly excursion every way. On Friday night there was a dinner to the trade at the Lenox Hotel, arranged by the committee, and this, too, was a delightful occasion.

The whole trade here is now in high feather; business is booming, and the prospect a glowing one.



DEMONSTRATION CARS OUTSIDE THE BOSTON SHOW BUILDING.

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Washington Show Opens; Fewer Exhibitors but More Cars.

Washington, D. C., March 23.—The third annual automobile show given under the auspices of the Washington Automobile Dealers' Association opened to-night in the armory of the Washington Light Infantry. There was a steady downpour of rain throughout the day and the outlook was anything but pleasant, but late in the afternoon the sun dissipated the clouds and the evening was all that could be desired from a weather standpoint.

Promptly at eight o'clock the doors of the armory were thrown open, and soon the exhibition was comfortably filled with a representative Washington crowd, embracing various members of the diplomatic corps, members of Congress, army and navy officers, high officials in the Government, prominent business and professional men and habitues of the fashionable world in general. More than ordinary interest was manifested in the various exhibits and many sales will undoubtedly be consummated during the week.

This year's exhibition is far ahead of anything ever held previously in the Capitol City, both in quantity and quality of exhibits. While there are not as many individual exhibitors as there were at last year's show, there are many more different makes of cars shown. Where a dealer showed one make last year, at the present exhibition he is showing from three to five different brands.

It was originally planned to have Col. A. A. Pope open the show with an address on the subject of automobile manufacture in the United States, but the Colonel was unable to reach Washington in time, and the management reluctantly decided to open the show without any ceremonies. It is understood that Col. Pope will be here later in the week and will probably make a short address.

The armory is located on Fifteenth street just off Pennsylpania avenue, and a huge electric sign bearing the magic words "Automobile Show" jutting out into Fifteenth street directs the way of the seeker after automobile information. Entering, the visitors passes through a passageway decorated in white and hung with smilax. The effect is very pretty and serves to give the visitor an idea of what is to follow. The exhibition hall is tastefully decorated, huge electric signs and a myriad of electric lights making the effect an impressive one.

Nearly all the spaces of the exhibitors are divided one from another by neat railings. Palms and potted plants were tastefully arranged in most of the stands, and these dashes of green harmonized very nicely with the general decorative effect.

As usual, some of the exhibits were in a state of incompleteness when the show opened, due to the fact that they were delayed in transit. It seems this bad feature can never be overcome, no matter how hard the management strives to get everything in shape for the opening.

The officers of the Dealers' Association, which is promoting the show, are as follows: W. J. Foss, treasurer; S. S. Olds, Jr., secretary; B. C. Washington, Jr., general manager. All these gentlemen have been tireless in their endeavors to make the affair a success. From all appearances at this writing their efforts have borne good fruit. Good weather during the week will have much to do with the show's success, for your society people will not come out when the weather is unpropitious.

Haley's Orchestra furnishes the music, and this is a feature that is always pleasing. Another attraction is a squad of young soldiers from the Northwestern Military Academy, Highland Park, Ill., under the direction of Major Davidson, the hero of many cross-country runs, both with bicycles and automobiles. They have with them a steam automobile of 10 horse power, equipped with a Colt automatic rapid fire gun, which fires 480 shots per minute. They have established a little camp at one end of the hall and give a practical illustration of how soldiers live on a forced march. During the week the squad will give a number of drills with their automobile battery.

Each exhibitor has a number of demonstration cars at the door of the hall and prospective buyers are given a flyer around the White House ellipse.

The exhibitors are as follows:

American Cycle Mfg. Co., Washington branch.—Three Toledo gasolene tonneaus, one Waverly Stanhope, one Waverly Chelsea, one Waverly tonneau, one Waverly runabout, one Elmore tonneau, one Elmore runabout, one Cadillac tonneau, one Cadillac runabout, one Columbia motor cycle, and Elmore motor in operation.

National Motor Car Co., Washington, D. C.—One Thomas tonneau, and automobile wheel with electric motor inclosed in wheel, the product of the Direct Traction Co.

C. S. Kessler & Bro., Washington, D. C.—



IN CENTRAL PARK ON A MARCH AFTERNOON.

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Diamond tires, horns, pumps and other sundries.

Howard A. Rhine & Co., Washington, D. C.—One Merkel motor cycle.

Automobile Storage & Repair Co. and National Electric Supply Co., Washington, D. C.—Rushmore searchlights, New York Belting and Packing Co.'s tires, batteries, etc.

Cook & Owesney, Washington, D. C., and Chas. E. Miller & Bro., Washington, D. C.—One Darracq tonneau, one Reading steam touring car, one Grout Model E, one Grout Model J, one Clement cycle motor.

Automobile Co. of Washington.—One Rambler chassis, one Locomobile trap, one Rambler touring car, one Conrad tonneau.

Walker & Hazeltine, Washington, D. C.—Fisk automobile tires.

The Week's Incorporations.

New York, N. Y.—Packard Motor Car Co., with $10,000 capital. Directors—G. T. McLaughlin, F. D. Peale and K. Connelly.

Chicago, Ill.—Automobile Engineering & Power Co., with $100,000 capital.

New York, N. Y.—Auto Machine & Repair Co., with $10,000 capital. Directors—Benjamin R. Tubbs, Henry W. Tubbs, of Kingston, and D. L. Creveling, of Wilkesbarre.

Conquering the Local "Terror" in Syracuse.



In Syracuse, what is known as the East Adams street hill is one to which the natives point as the local "terror." It is that steep that when an automobile mounts it without faltering the car is at once voted "a good one." Realizing the fact, the Century Motor Vehicle Co. uses the hill as a testing ground, each of its cars, before being shipped, being required to make the ascent, not once, but many times. The illustration shows one of the Century Tourists negotiating the grade, which averages 18½ per cent and is 22½ per cent at the summit. The Century people claim that theirs is the only single cylinder car that has climbed the hill from five to ten times in succession and without stopping the motor.

Baltimore, Md.—One Winton touring car, one Stevens-Duryea carriage, one general tonneau.

National Capitol Automobile Co., Washington, D. C.—One Peerless chassis, one Autocar chassis, one Oldsmobile runabout, one Stevens-Duryea carriage, one General model Oldsmobile.

Washington Electric Vehicle and Transportation Co.—One 2½-ton Columbia truck, one Columbia victoria, one Columbia runabout, one Columbia tonneau, one Columbia gasolene tonneau.

Tennant Automobile Tire Co., Springfield, O.—Automobile tires.

20th Century Mfg. Co., New York.—20th Century automobile lamps.

Schaum Automobile and Motor Mfg. Co., Baltimore, Md.—Champion accumulators and Schaum improved spark plugs.

Washington Motor Car Co.—Northern, Knox and Orient buckboard. Exhibit delayed.

United States Long Distance Automobile Co., Washington branch—Three U. S. Long Distance tonneaus.

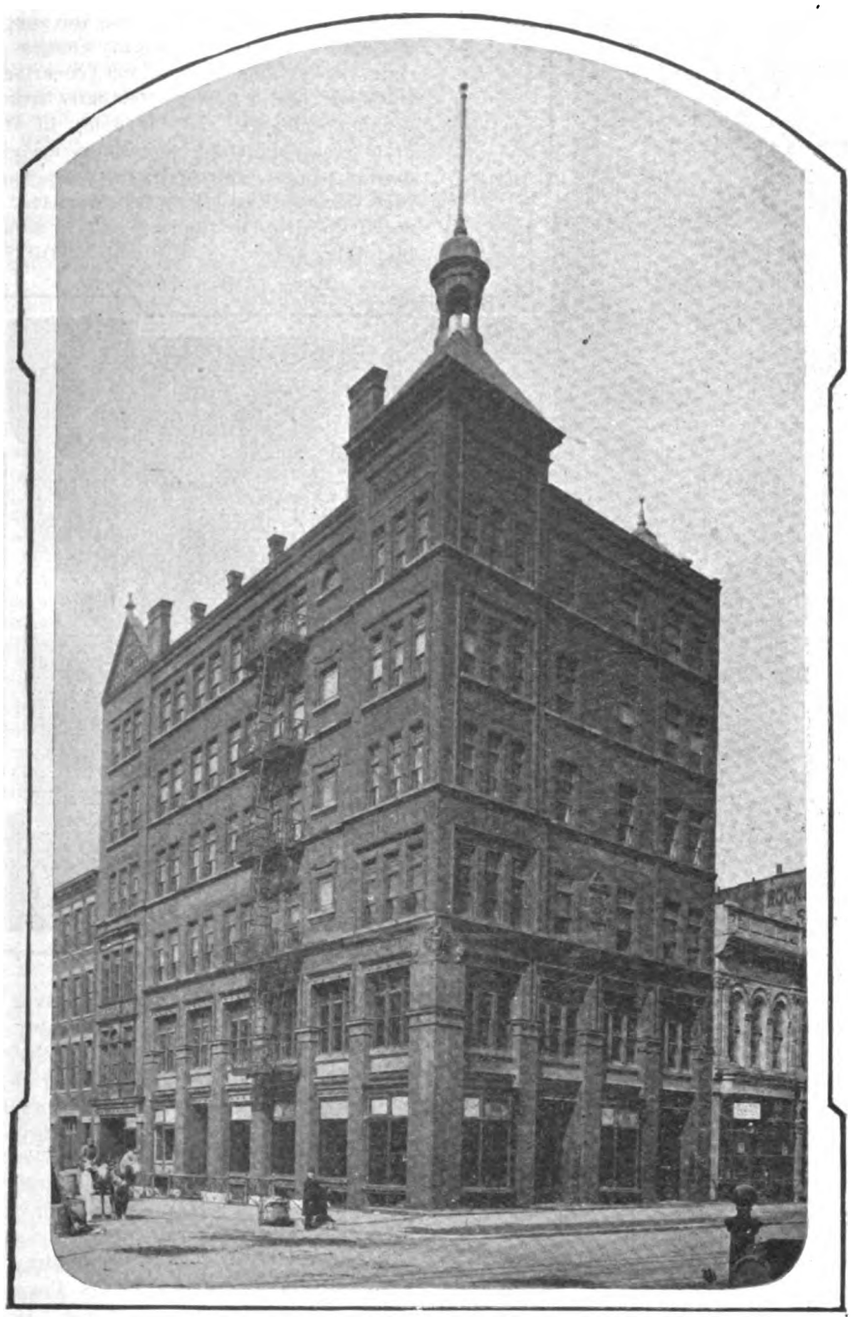
The Demand for Darracqs.

It will surprise many to learn that three-fourths of all the cars imported into this country during 1902 are asserted to have been brought over by one concern, the American Darracq Automobile Co., of this city. However surprising it may prove, Manager F. A. La Roche of the Darracq company maintains the correctness of the assertion, and, what is more, states that that record will be surpassed during the current year. He naturally is well pleased with his share of the business and reports brisk sales.

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The Metropolitan Salesrooms and Garages—III

What is probably the largest storage, sales and repair station in the metropolis is almost the latest one established. This is the new place of the Mobile Co. of America, at No. 1,713 Broadway, on the corner of Fifty-fourth street.



MOBILE CO. OF AMERICA, No. 1713 BROADWAY.

This is a handsome brick building, six stories in height above a basement. It has a frontage of 60 feet in Broadway and of 84 feet in Fifty-fourth street. Inside there is a total of 35,000 square feet of floor room, giving a capacity for fully 200 motor vehicles.

The interior is in keeping with the exterior of brick, with brownstone trimmings. Formerly the building was occupied by a carriage concern, and many of the floor arrangements made by them were found ideal for the purposes of an automobile garage. This is particularly noticeable on the top floor, where the machine shop is located. The front end of the floor has been partitioned off into perfectly equipped painting and drying and wood working rooms, and these apartments have been retained for these purposes. There is also a washing table on this floor. The machine shop is equipped with an assortment of lathes, milling and other machines, and, being lighted through a skylight as well as through two rows of windows, there is every opportunity for excellent work being done. A stock room filled with parts for Mobiles and every other sort of machine is another feature of this floor.

All the power in the building is electrical. An elevator 15 by 7 feet, and capable of hoisting 5,000 pounds, runs from the cellar to the top floor. A wide doorway on the Fifty-fourth street side permits of a car of the largest size made being driven from the street directly on to the elevator.

The ground floor is the salesroom, although some storage machines also are kept there, Robert C. Fulton, E. R. Thomas and the Marquis Jean Mazzacorati being already numbered among the customers of this new place, which was opened on February 15. A waiting room for patrons, offices for Superintendent A. S. Robinson and lockers for customers are also fixtures of the main floor.

In the basement there is a washing table 23 by 27 feet, that has been put in by the Mobile company, and here also cars are stored.

On the second floor are the offices of the manager, E. B. Gallaher, the result of whose ideas are seen and whose personality is felt throughout the building. The offices occupy this entire floor, and from them the whole sales business of the Mobile company is managed.

The third is the electrical floor, and here is found the expression of one of Mr. Gallaher's ideas in the way of a charging board that is remarkably efficient, convenient and economical. It is a compound board, with which a dozen cars can be connected for charging at one time, and by simply pressing certain buttons a reading can be made of any one of the cars being charged, the quantity of "juice" it has received determined, and, if desired, it can then be cut off without in any way interfering with the charging of the other cars.

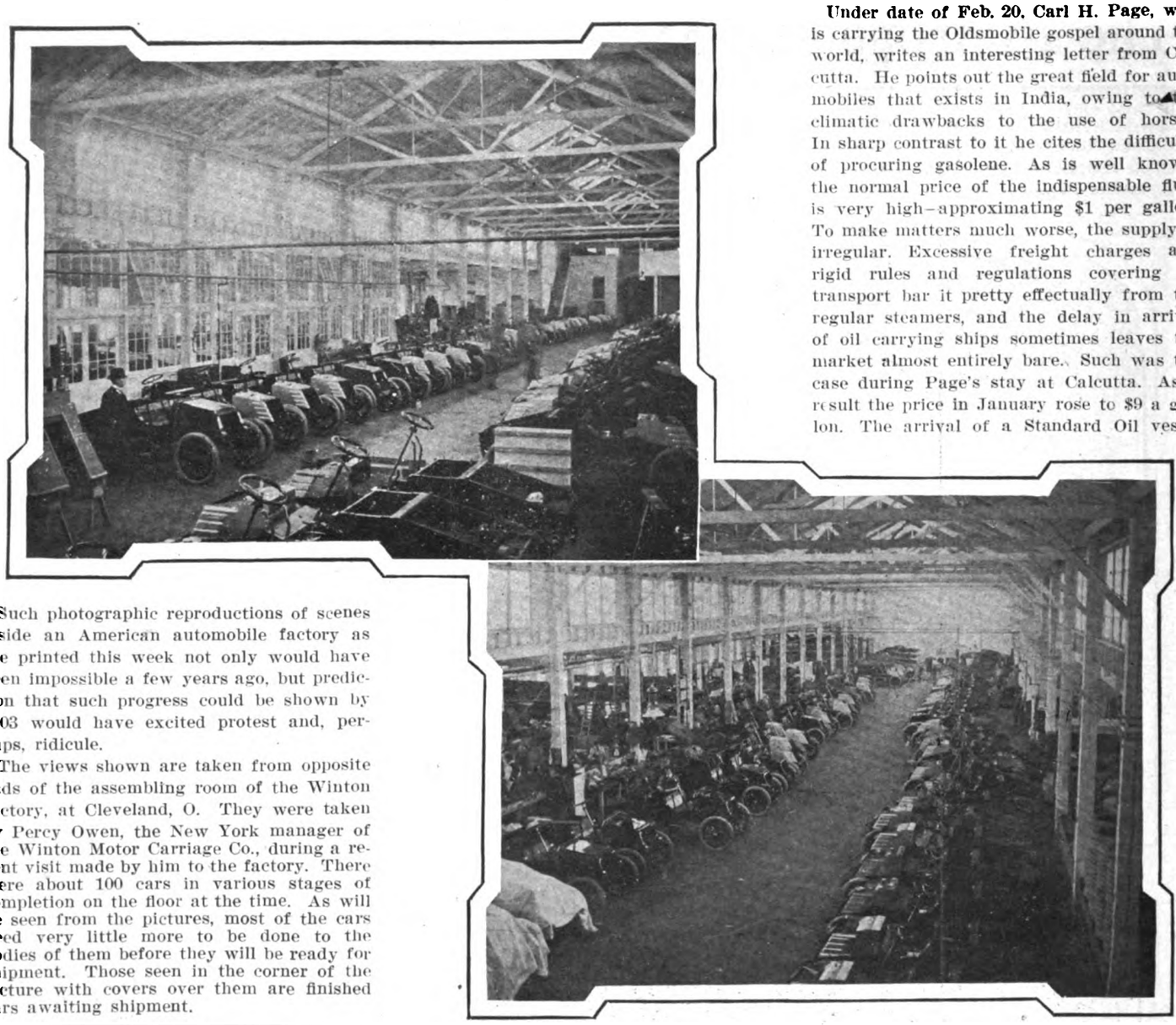
On each floor there is a locker room for the convenience of customers, and on the fourth floor is a comfortably appointed room for chauffeurs. The fifth floor is for storage and has no especial features.

One rule of this elaborate establishment that was made by Manager Galleher is that every car when it comes in is thoroughly gone over by an expert and a report made on its condition, so that if any repairs are needed a report can be made to the owner.

The spaciousness of this repository, the completeness of its equipment and its proximity to Central Park all mark it for a place to be favored by automobile owners.

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Two Views of the Winton Assembling Room.



Such photographic reproductions of scenes inside an American automobile factory as are printed this week not only would have been impossible a few years ago, but prediction that such progress could be shown by 1903 would have excited protest and, perhaps, ridicule.

The views shown are taken from opposite ends of the assembling room of the Winton factory, at Cleveland, O. They were taken by Percy Owen, the New York manager of the Winton Motor Carriage Co., during a recent visit made by him to the factory. There were about 100 cars in various stages of completion on the floor at the time. As will be seen from the pictures, most of the cars need very little more to be done to the bodies of them before they will be ready for shipment. Those seen in the corner of the picture with covers over them are finished cars awaiting shipment.

From Olds's Foreign Missionary.

Under date of Feb. 20, Carl H. Page, who is carrying the Oldsmobile gospel around the world, writes an interesting letter from Calcutta. He points out the great field for automobiles that exists in India, owing to the climatic drawbacks to the use of horses. In sharp contrast to it he cites the difficulty of procuring gasolene. As is well known, the normal price of the indispensable fluid is very high—approximating $1 per gallon. To make matters much worse, the supply is irregular. Excessive freight charges and rigid rules and regulations covering its transport bar it pretty effectually from the regular steamers, and the delay in arrival of oil carrying ships sometimes leaves the market almost entirely bare. Such was the case during Page's stay at Calcutta. As a result the price in January rose to $9 a gallon. The arrival of a Standard Oil vessel relieved the situation. The natives look upon the automobile as an unearthly thing and believe it has a god inside. The white residents, however, take to it with enthusiasm. The heat makes the use of horses well nigh impossible and creates a promising field for power-driven vehicles. There are now not more than twenty-five automobiles in India, but Page says his sales have been large and that there is a demand for all that can be sent. There have been thirty Oldsmobiles sent to various points Page is to visit.

Compound Motors Coming Through.

The Graham-Fox Co. is now well settled in its new quarters at 542 W. Broadway, New York, and work is progressing at a rate that ensures the speedy appearance of cars equipped with the company's compound gasolene motor, the sensational performance of which a few months ago will be recalled.

A force of draughtsmen is at work finishing the drawings for the various cars, motors, etc., the company is preparing to market. These include a 100 horsepower racing car built to the special order of a customer, and a 24 horsepower tonneau touring car, which is the first of the regular models to be produced.

The latter is a car of thoroughly modern design, with extremely graceful lines. The regulation Graham-Fox compound gasolene vertical motor, placed in front under a bonnet, supplies the motive power. The latter is transmitted by means of sliding gears and counter shafts direct to the rear wheels by individual chains. The motor, which was described in these columns some months ago, is retained unchanged in principle, the two regular cylinders exhausting into a third and increasing the efficiency to a remarkable extent. Some detailed changes have been made, the most important being the fitting of mechanical intake valves.

To a Motor World man last week Mr. Fox stated that work on both the tonneau and the racing car was well under way. He thought that by May 15 they would have the first batch of tonneau cars ready, and would in the mean time be pushing along on the other models. There was a vast deal to do, he said, but remarkable progress was being made, and with all the capital they needed available they would even this year be able to turn out a very respectable number of cars.

Brandes Bringing Over two New Cars.

A racing Cudell car is being imported by J. C. Brandes, the representative in this country of the German concern of that name. A Pipe car, a Belgian production, which was awarded a gold medal at the last Paris exhibition, is also on the way to form an addition to the Brandes stock.

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NEW JERSEY BILL PASSES.

(Continued from page 983.)

and uniform rules regulating the use and speed thereof.

1. Wherever the term "motor vehicle" is used in this act it shall be construed to include automobiles, locomobiles and all other vehicles propelled otherwise than by muscular power, excepting the cars of electric and steam railways and other motor vehicles running only upon rails or tracks; but nothing in this act contained shall be construed to apply to or affect bicycles, tricycles or such other vehicles as are propelled exclusively by muscular pedal power.

2. Every resident of this State who is the owner of a motor vehicle, and every non-resident owner whose motor vehicle shall be driven in this State, shall file in the office of the Secretary of State a declaration duly verified that such owner is competent to drive the motor vehicle for which application for license is made, and a written statement containing the name and address of such owner, together with a brief description of the character of such motor vehicle, including the name of the maker and the manufacturer's number of the motor vehicle, if number there be, and the rated horsepower of the motor vehicle, and shall pay to the Secretary of State a registration fee of one dollar for each motor vehicle; the Secretary of State shall issue for each motor vehicle so registered a certificate, properly numbered, stating that such motor vehicle is registered in accordance with this section, and shall cause the name of such owner, with his address, the number of his certificate, and a description of such motor vehicle or motor vehicles, to be entered in alphabetical order of the owners' names in a book to be kept for such purpose; this section shall not apply to manufacturers or dealers in this State of motor vehicles except as to vehicles kept by such manufacturer or such dealer for private use or for hire.

Penalty: For driving a motor vehicle without a license: First offence, $50; second offence, $100. (Sec. 17.)

3. The owner of each and every motor vehicle driving the same upon the public streets, public roads, turnpikes, parks, public parkways, public driveways or other public highways in this State shall have the number of the license issued as aforesaid by the Secretary of State upon the back of every such motor vehicle, in a conspicuous place, so as to be plainly visible at all times during daylight, such numbers to be separate Arabic numerals, not less than three inches in height, the strokes to be of a width not less than three-eighths of an inch, and, excepting the numbers upon the lamps, as required by section four of this act, such owner shall not be required to place any other marks of identity upon said motor vehicle.

Penalty: For driving a motor vehicle without a number, $15. (Sec. 17.) For using fictitious number, $100. (Sec. 8.)

4. Every motor vehicle shall carry, during the period from one hour after sunset to one hour before sunrise, at least two lighted lamps, showing white lights, visible at least two hundred feet in the direction toward which such motor vehicle is proceeding, and shall also exhibit at least one red light visible in the reverse direction; upon the sides or fronts of the two aforesaid lamps showing white lights shall be displayed in such manner as to be plainly visible when said lamps are lighted the number of the license issued as aforesaid by the Secretary of State, the same to be in separate Arabic numerals, not less than one inch in height; every motor vehicle shall also be provided with good and efficient brake or brakes, and shall also be provided with suitable bell, horn or other signal device.

Penalty: $10. (Sec. 17.)

5. The following rates of speed may be maintained, but shall not be exceeded, upon any public street, public road, or turnpike, public park or parkway, or public driveway, or public highway in this State by any one driving a motor vehicle:

(1) A speed of one mile in six minutes upon the sharp curves of a street or highway and at the intersection of prominent cross roads where such street, road or highway passes through the open country, meaning thereby portions of a town, township, borough or village where houses are more than one hundred feet apart.

(2) A speed of one mile in seven minutes where such street or highway passes through the built-up portion of a city, town, township, borough or village where the houses are and average less than one hundred feet apart.

(3) Elsewhere and except as otherwise provided in subdivisions one and two of this section a speed of one mile in three minutes.

Provided, however, that nothing in this section contained shall permit any person to drive a motor vehicle at any speed greater than is reasonable, having regard to the traffic and use of highways, or so as to endanger the life or limb or to injure the property of any person; and it is further provided that nothing in this section contained shall affect the right of any person injured either in his person or property by the negligent operation of a motor vehicle to sue and recover damages as heretofore.

Penalty: (1) $25; (2) $25; (3) First offence, $50; second offence, $100, or in the discretion of the Magistrate, ten days' imprisonment. (Sec. 17.)

6. Every person driving a motor vehicle shall, at request or upon signal by putting up the hand or otherwise from a person riding or driving a horse or horses in the opposite direction, cause the motor vehicle to stop and remain stationary so long as may be necessary to allow said horse or horses to pass.

Penalty: $10. (Sec. 17.)

7. No owner of a motor vehicle who shall have obtained a certificate from the Secretary of State as hereinbefore provided shall be required to obtain any other license or permit to use or operate the same, nor shall such owner be excluded or prohibited from or limited in the free use thereof, nor limited as to speed upon any public street, avenue, road, turnpike, driveway, parkway, or other public place, at any time, when the same is or may hereafter be opened to the use of persons having or using other pleasure carriages, nor be required to comply with other provisions or conditions as to the use of said motor vehicle, except as in this act provided; provided, however, that nothing in this section contained shall be construed to apply to or include any speedway created and maintained in pursuance of an act of the legislature of the State of New Jersey, entitled "An act to provide for the construction and maintenance of speedways in the counties of this State," approved March nineteenth, one thousand nine hundred and two; nor to any parks or parkways created and maintained in accordance with an act of the legislature of the State of New Jersey, entitled "An act to establish public parks in counties of this State and to provide for the acquirement, improvement and regulation of the same," approved March twentieth, one thousand nine hundred and one.

No city, town, township, borough or other ordinance, by-law or resolution limiting or restricting the use or speed of motor vehicles, and no ordinance, by-law or resolution heretofore or hereafter made by any municipality shall have power to make any city, town, township, borough or other municipal or local authority by whatever name known or designated in respect to or limiting the use or speed of motor vehicles shall have any force, effect or validity.

8. Any person driving a motor vehicle the owner of which shall not have complied with the provisions of this act, and which motor vehicle shall display a fictitious number, the same being a number other than that designated for such motor vehicle by the Secretary of State, shall, upon conviction, be fined in a sum not exceeding one hundred dollars, and, in default of payment thereof, be punished by imprisonment in the county jail for a period not exceeding thirty days; provided, this section shall not be construed to prohibit a motor vehicle displaying the proper number of its license from also displaying any other number for any lawful purpose.

9. Any person driving a motor vehicle upon any public streets, public highways, public roads, turnpikes, parks, public parkways or public driveways in this State in a race or on a bet or wager shall, upon conviction, be fined in a sum not exceeding fifty dollars, and, in default of payment thereof, be punished by imprisonment in the county jail for a period not exceeding twenty days.

10. Upon oath or affirmation made acccrding to law that any person has violated any of the provisions of this act, any magistrate of the county where such offence is committed may, within three months after the commission of such offence, issue process in the nature of a summons or warrant, in his discretion, at the suit of any person, to the use of the overseer of the poor of the city, town, township or borough where such offence is committed, against the person so charged, which process shall, when in the nature of a warrant, be returnable forthwith, and when in the nature of a summons, in not less than three nor more than ten days; such process shall state what section or provision of this act is alleged to have been violated by the defendant, and the time and place of such violation, and on the return of such process, or at any time to which the trial may be adjourned, the magistrate before whom said complaint shall be made shall proceed to hear the testimony and to determine and give judgment in the matter without the filing of any pleading; if the magistrate before whom such trial is had shall find the defendant guilty, he shall give judgment for the penalty mentioned in the section or provision herein violated, and such costs as are allowed in the justice's court in like proceedings for collection of penalties; in default of the payment of the judgment and costs, the defendant so convicted may be sentenced to the county jail for such period as is provided for in this act.

11. Any constable or police officer is hereby authorized to arrest, without warrant, any person driving a motor vehicle contrary to the ninth section of this act, and to bring the person so offending before any magistrate of the county where such offence is committed; the person so offending shall be detained in the office of such magistrate until the officer making such arrest shall make oath or affirmation, which he shall do forthwith, as provided in section ten of this act, whereupon such magistrate shall issue a warrant returnable forthwith; the said magistrate shall proceed to hear and determine said complaint and give judgment or adjourn the hearing of said complaint, as

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provided by sections ten and twelve of this act.

12. The magistrate before whom a complaint is made shall adjourn the hearing of said complaint for a time not less than three days and not exceeding ten days, if the defendant shall so request, and shall deposit the sum of fifty dollars as security to appear at the date to which such hearing may be adjuorned, and if the said defendant does not appear at the time mentioned, then the said sum deposited shall be forfeited, and the balance thereof, after payment of the costs, shall be paid to the overseer of the poor for the use of the poor of the city, town, township or borough where the offence is committed.

13. If a person violating any of the provisions of this act shall be or reside in any other county of this State than that in which said warrant shall be issued, the magistrate issuing the same shall, in writing, thereupon direct that the sum of fifty dollars be deposited as security by any party so charged, and it shall be the duty of the party serving the same to carry it to some magistrate of the county wherein such person resides or can be found; the magistrate to whom the same shall be presented, on proof being made to him of the handwriting of the magistrate who issued such warrant, shall indorse his name thereon with an authority to arrest such person in the county where the magistrate so indorsing resides, which shall be sufficient authority to execute such warrant in the county where it shall be indorsed.

14. The party so charged being apprehended shall be taken before the magistrate who indorsed said warrant, or some other magistrate of the same county who may, and, if tendered, shall take from such person a deposit of fifty dollars in cash to secure the appearance for trial of said defendant before the magistrate who issued said warrant, and thereupon the person so apprehended shall be released from the custody of the officer arresting him; the date of said trial shall be fixed by the magistrate accepting said deposit, and the sum so received by him shall be turned over to the magistrate issuing the warrant, to be retained and disposed of as provided in section twelve of this act in default of the appearance of the person so charged.

15. Any party to any proceeding instituted under this act may appeal from the judgment or sentence of the magistrate to the Court of Common Pleas of the county in which the said proceedings shall take place; provided, that the party appealing shall, within fifteen days after the date of said judgment, file a written notice of appeal, pay the costs of such proceedings and deliver to the magistrate a bond to the overseer of the poor of the city, ward, town, township or borough in double the amount of the judgment and costs, with at least one sufficient surety, conditioned to prosecute the said appeal and to stand to and abide by such order or judgment as may thereafter be made against said party; a commitment, however, may issue at any time before the taking of an appeal for the imprisonment of the defendant unless security be given as provided in section eighteen of this act, which said commitment shall be vacated either by appeal or by the payment of the judgment and costs.

16. Whenever an appeal shall be taken as aforesaid, it shall be the duty of the magistrate to send all papers and money, if any deposited, pursuant to the provisions of this act, together with a transcript of the proceedings in the case, to the next Court of Common Pleas of the said county, which court shall try and determine all such appeals in the same way and manner that appeals from the courts for the trial of small causes are now tried and determined.

17. Any person violating the provisions of this act shall, except as otherwise provided herein, upon conviction, be fined in a sum not exceeding the amounts hereinafter set forth: for a violation of section two, fifty dollars; for a violation of section three, fifteen dollars; for a violation of section four, ten dllars; for a violation of section five, subdivision one, twenty-five dollars; for a violation of section five, subdivision two, twenty-five dollars; for a violation of section five, subdivision three, fifty dollars; for a violation of section six, ten dollars; in default in the payment of any such fine there shall be imposed an imprisonment in the county jail for a period not exceeding ten days; provided, that any offender who shall have been found guilty of a violation of this act and sentenced therefor, and who shall be convicted of a second offence of the same violation, may for such second offence be fined in double the amount herein prescribed for the first offence, and may, in default of the payment thereof, be punished by imprisonment in the county jail for a period not exceeding ten days; and further provided, that any offender who shall have been found guilty of a violation of section five, subdivision three, thereof and sentenced therefor, and who shall be convicted of a second violation of the same section and subdivision, may, in the discretion of the magistrate, instead of being fined as prescribed, be punished by imprisonment in the county jail for a period not exceeding ten days.

18. Every fine shall be payable forthwith, or, in default of such payment the magistrate may accept a bond to the overseer of the poor of the township, borough, ward or city in double the amount of the judgment and costs, with at least one sufficient surety, conditioned to pay the said judgment within a period thereafter to be fixed by said magistrate, not exceeding ten days, or in lieu of such bond the magistrate may retain possession and hold the motor vehicle as security for such payment.

19. All penalties collected from persons offending against the provisions of this act shall be paid by the magistrate receiving the same to the overseer of the poor of the city, ward, town, township or borough where the offence is committed, for the use of the poor in their respective districts.

20. The word "magistrate" used in this act shall be deemed and understood to mean and include all justices of the peace, judges of city criminal courts, police justices, recorders, mayors and all other officers having the power of a committing magistrate.

21. All acts and parts of acts inconsistent herewith are hereby repealed.

22. This act shall take effect immediately.

DECLARATION.

The undersigned does hereby declare, pursuant to the provisions of an act of the legislature of New Jersey, entitled "An Act defining motor vehicles and providing for the registration of the same, and uniform rules regarding the use and speed thereof," that he is the owner of and competent to drive the motor vehicle for which application for license is hereby made as set forth in the annexed statement.

Name of Owner.....
Residence Address.....

State of.....
County of .....
ss.:

....., being duly sworn, says that the statement of facts contained in the foregoing declaration is true,

Subscribed and sworn to before me this.....day of....., 1903.

STATEMENT.

The name and address of the undersigned owner are as follows:

Name .....
Address .....
The character of the motor vehicle is a.....
The maker is.....
The maker's number is.....
The rated horsepower is.....

Annexed hereto is the statutory declaration.

.....
Owner.

Note.—The declaration and statement should be sent to Hon. S. D. Dickinson, Secretary of State, Trenton, N. J., with a filing fee of $1.

Omitted One of the Powers.

Editor The Motor World:

In your issue of March 5 I notice that a Mr. Fisher presents what was intended to be taken as the comparison of cost, repairs, trouble and general efficiency of three powers for automobiles, namely, steam, gasolene and electricity, and as he has omitted the White system the writer does not think the report complete, and will not serve the purpose for which he no doubt intended it, namely, to enlighten the public as to which machine to buy.

The writer has had experience with gasolene cars, having crossed the Rocky Mountains in a well known gasolene touring car of 15 h. p. and having been over the same road in a 6 h. p. White car. I believe if Mr. Fisher had been along on these two trips he would make some change in his figures. The results obtained by the writer with the gasolene car and the White car are about on a par with the results shown by the Automobile Club of America in their several endurance runs. In the 100-mile non-stop endurance run of May 30 last a record was kept by the A. C. A. of fuel consumption of 31 gasolene cars entered. Seventeen went through without a stop with an average fuel consumption of 6 3-17 gallons per machine for the 100 mile run. Three Whites were entered and came through without a stop, the average fuel consumption for each machine for the 100 miles being 6 93-100 gallons. The total time consumed for repairs for the 31 gasolene cars was 585 minutes. There was no time consumed for repairs on the White. In the last New York-Boston and return 500 mile endurance run there were 56 gasolene cars entered. These cars had a total of 202 involuntary stops due to disorder of their mechanism, and consumed in all of these stops 3,989 minutes. Four White cars were entered, two being delivery wagons, with one involuntary stop for the four; time consumed, four minutes; the car making the stop being a delivery wagon. These are a few figures taken from the official record, which can be obtained from the Automobile Club of America. Four White cars entered in the New York-Buffalo run made even better showing than the above in comparison with the gasolene cars.

Mr. Fisher's average of one minute for starting a gasolene car, in the writer's experience, is an uncertain quantity, whereas with the White car it is not necessary to exceed five minutes starting from a cold machine.—W. J., Denver, Col.

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IMPORTANCE OF INSPECTION

Little Lapses at the Factory That Caused the Dealer Worry and Expense

"There is one trouble noticeable in nearly all new business that is noticeable in the automobile industry just now; or at least it is worrying the retail portion of it," said a well known metropolitan tradesman last week to The Motor World man, who looked sympathetic and nodded encouragingly.

"I refer to the lack of proper inspection. There is a screw loose somewhere. Things that should not escape the competent and conscious inspector are not detected and the cars leave the factory in a condition that guarantees trouble for some one. If the dealer looks after things properly—as he should do for selfish reasons if nothing else—he may discover and rectify these mistakes; but he is not infallible, and sometimes they will get past him; besides, it is not fair that he should be compelled to put in so much time at his own cost.

"Now, take my own case," he went on. "Here is a car that I am making a strong push on"—indicating a well known gasoline car that sells at a popular price. "It is a fine car—one that is well made, strong and durable, with plenty of power and speed; in short, an ideal car of its kind. It is a splendid seller, and I am putting them out just as fast as I can get them in carload lots. Good proposition, isn't it? Well, there's a fly in the ointment, as usual. This particular fly is the lack of competent inspection.

"There are lots of little things that are not quite right. We take them out of the car and put them together and then proceed to go over them to see if they are all right. At first we thought we could do this in a few hours; but we have changed our minds.

"One of our first sales was to a man down on Long Island. He took the car and started to drive it home; got about half way there and it stuck, leaving him 'steen miles from anywhere. He tried to fix it, after locating the trouble in the carburetter, but had to give it up ac a bad job. He put the car in a barn and went home by train, raging inwardly—outwardly, too, maybe. Came post haste here next day and raised Cain. Wanted a new car or his money back. The easiest way out of it was to comply with his demand; and we gave him a new car, but not until I was dead certain that it was all right, although it took us several days to become convinced of this fact. It worked like a charm, and since then the man has been one of our best customers. Has brought or sent in half a dozen friends, two of whom have bought cars like his.

"We had two or three cases of this kind. One of them occurred only the other day, and when we had begun to think that we had things dead to rights. Sold the car to a man over Tuxedo way and shipped it to him. The first ride he took he had an experience similar to the Long Island man's. We did not have to give him a new car, however. But it cost us quite a few dollars to straighten the thing out. First we sent a man out to fix the car. He worked on it all day, and then came back and recommended that we get it back and fix it right. This we did, and have not heard from it since.

"We are putting from one to five day's work on each of these cars, and it's pretty expensive, to say nothing of the time it takes.

"What are the chief troubles? Well, that is hard to say. There is never much wrong. If there was we might feel tempted to give the car up as no good. But it is good—the best car you could wish for after it's put to rights. The parts are well made and the assembling appears to be all right. But there is a lack of something. Perhaps it is the absence of a brainy chief inspector—a man who goes over everything, looking for infinitesimal faults or shortcomings, and who will not be satisfied with anything but the very highest grade of work. It is the touch of a master hand that is wanted, and while every factory can hardly be expected to have such superlative workmen it would pay them to do so. Certainly the satisfaction to the purchaser would be sufficient recompense for the trouble and expense incurred.

"What are we going to do about it? I hardly know. I have just written a long letter to the factory, relating some of our experiences, and putting the case before them in the fullest and most explicit manner. What effect it will have I can't say.

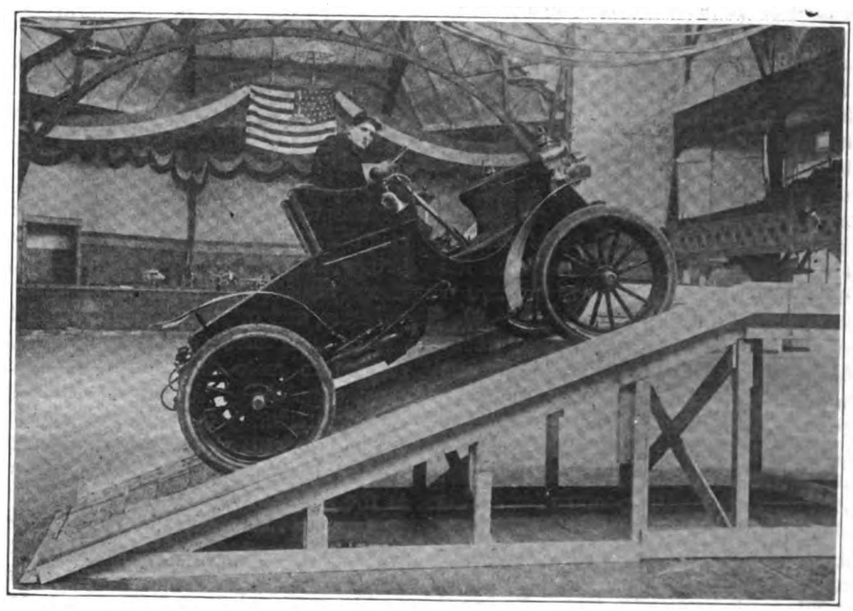
"But one thing is certain: Either they must do the inspecting or we shall. The instinct of self preservation compels us to this course. One dissatisfied customer can do more to hurt us, hurt the maker and hurt the automobile industry generally than any other thing. And when you multiply the number there is going to be danger of giving the business a black eye from which it will take a long time to recover.

"Of course, I appreciate the fact that early in the season an unusual amount of trouble is to be looked for. And I will admit that there is some improvement noticeable each week. But there is room for a great deal of improvement, and valuable time is being lost. After all, it comes down to this: Are makers going to be satisfied with a 'good enough' policy, or are they going to strive for perfection—or as near it as poor human nature can come?"

To Welcome the New White.

Hope deferred has only sharpened the desire felt by the White Sewing Machine Co.'s forces in this city for the new touring car. The salesroom in Union Square has been made ready for it. New wall and floor coverings—the latter a particularly rich and handsome carpet—impart an air of expectancy, and the entire front of the establishment has been made ready for the new car. When The Motor World man stopped in last week he was informed that the waiting period was about at an end, for a touring car had just been received at the garage and was being made ready for Manager Denning to give it a trial run. The car presented an imposing appearance, its fine finish being especially noticeable. A few detail changes have been made since the car was seen at Madison Square Garden. Among them may be mentioned the finishing of the engine, pipes, etc., under the bonnet, which is now covered with aluminum paint, the water regulator, etc.

Proving Its Hill Climbing Capacity.



A PACKARD CAR ASCENDING A FLIGHT OF STAIRS PITCHED AT A 25 PER CENT ANGLE.

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WHY THE PNEUMATIC

Figures From Paris to Prove the Air Tire More Durable Than the Solid.

"There are two good reasons why the Parisian cab owners have adopted pneumatic tires—(1)they last longer, and (2) they are more sought after by the clients. It may be difficult to convince some American readers that pneumatic tires outlast the solid, but the best proof of this statement is their general adoption by cab owners. A set of four pneumatic tires will last (with ordinary care) thirteen months for the front wheels and fifteen for rear wheels. When the tires are on cabs of a co-operative company they will last fifteen months on the front wheels anad eighteen on the rear wheels. A tire may pick up a nail once in a while, but this puncture is quickly repaired by a workman on the company's premises," says the India Rubber World.

"Prices of pneumatic tires in Paris have fallen to 400 francs ($78.20) for a set of four, including four wire wheels with steel hubs turned up to fit the stub of the axle, and the whole mounted on the cab. This same outfit two years ago sold for 750 francs ($144.75). This great reduction in price has mare pneumatice cheaper than solid tires. The cab owner does not feel the outlay, because it is the public that 'pays the freight.' There are very few owners of a single cab; most of them are owned by men who have from twenty to 100 cabs, which they rent by the day to responsible cochers. The average rental without rubber tires is about 15 francs ($2.90) per day, with the privilege of changing horses once during the day. If the cab has pneumatic tires the price is from two to three francs more, or $3.28 to $3.47 per day. Cabs with solid tires are rented to the cochers at the same rate as the steel tired wheels.

"The Parisian is now accustomed to wait until he finds a metal wheeled cab before he gets in. Nearly all pneumatic tires for cabs are mounted on wire wheels. The Parisian is evidently of the opinion that pneumatic tires on wood wheels do not give the same comfort as on metal ones. The pneumatic tired cab is always busy, and loads oftener, and the Parisian is more liberal with his pour boire than he would be if he used a steel or solid tired cab.

"It is expected that there will be about six thousand pneumatic tired cabs in Paris by the end of this year, and if the two large cab companies adopt them a cab on the streets of Paris without pneumatic tires will become as great a curiosity as was the first cab that appeared with pneumatics. This will simply be history repeating itself, for it is only a few years since great excitement was created by the appearance of the first automobile with pneumatic tires. To-day it is the automobile with solid tires that excites comment. So it will be with the fiacre. The carriage builders and owners of private carriages are also fast adopting pneumatic tires, which are put on in a neat manner by doing away with the wooden fellies; then metal sockets are slipped over that part of the spokes that were in the felly, and the pneumatic tire rim is screwed onto these sockets from the inside of the rim. This makes a neat job and a graceful one."

How Man's Freedom has Been Furthered.

"First, in the early days of the world, were the slow moving caravans of camels, picking their arduous ways along rough tracks and ungraded paths, the creaking ox cart and the laden mule or horse. Then road building and the creation of palanquins and carriages, then the post road, the roadside tavern and the note of the coach horn awakening the quiet country hamlet from its lethargy. Then the two shining rails, the steam engine and the railway train, then the overhead wires and the electric car, binding village to village. And now the automobile practical, safe, inexpensive, vaunting the railway train, outspeeding the fleetest horse! A horse can go a mile in about two minutes, or it can go forty miles in a day. An automobile can go a mile in one minute or forty, fifty, and even sixty miles in one hour, and keep up that pace hour after hour indefinitely," says the New York Observer.

"This is what the automobile means to-day. Good roads, reaching out into all parts of our land, roads which will be useful also for the farmer and the traveler, with or without his automobile. It means that the day of railroad monopoly is past and that the individual will go and come how, when and where he pleases. It means that that provincialism which stunted the growth of Greece, which has arrested national and personal development in China for three thousand years, and which is the greatest foe civilization has to fight, will be annihilated. It means that one may live in the country, yet pursue an urban occupation.

Royalty's Tire Equipment.

In view of the satisfactory behavior of the tires fitted to King Edward's Daimler cars—solid rear and pneumatic front—a similar combination has been decided upon for the Prince of Wales' car, now building. All these cars are heavy, and the freedom from puncture and other troubles secured by the use of solid tires for the rear wheels has seemed to more than offset the disadvantages entailed.

It is interesting to recall that the Electric Vehicle Co. still retains this combination for one at least of their models. This vehicle is the surry. In it so much weight is carried on the rear wheels that solid tires were originally used from necessity, and even now, although pneumatic tires have been vastly improved, it is deemed wise to make no change.

APPRECIATING THE RAILS

How New York Horses and Truckmen are Showing the Value of Steel Roadway.

An object lesson in good road value is afforded by the daily occurrences in Murray street, west of Broadway, this city. It is here that the experimental steel roadbed was laid a few months ago, consisting of two rails of about a footh in breadth and having small flanges to hold vehicle wheels in place.

The street slopes upward from the river, the block ending at Broadway being much less steep than that part further west. It is given over to loaded drays, trucks and delivery wagons, and the travel is almost entirely uphill, i. e., from the river. Consequently the pull is a sharp one, and the rate of travel slow.

The tracks are in the centre of the street. The latter is so wide that wagons backed up at either curb almost clear the tracks; but unless they are small they do not quite clear. Therefore vehicles using the tracks have to leave it frequently to get past the loading or unloading wagons. In spite of this the drivers steer for the rails, or, if they neglect to do so, many of the horses move over to it of their own volition. Consequently there is a long line of vehicles in the middle of the street, broken at intervals by the obstructing wagons, but seldom keeping away from the tracks.

A wagon on the tracks pulls very much easier than one drawn over the Belgian blocks at either side. The difference is seen whenever a change is made. On the smooth roadway the horse or horses have a comparatively easy task; on the blocks they labor perceptibly.

Both drivers and horses seem to know that the rails are there, and why, however. And if they were not blocked it is probable that the remainder of the street would not be used at all.

Features of Mercedes Road Model.

One of the leading road models of the 1903 Mercedes product is the eighteen horsepower car. It weighs 2,294 pounds without gasolene or water. The wheel base is 2,330 mm. (7 ft. 7¾ in.).

The cylinder bore is 110 mm. by 140 mm. stroke (4 1-3 in. x 5½ in.). It is fitted with four speeds, and the change is operaed by a single lever, which moves forward and backward, the lateral motion having been done away with. The normal speed of the engine is one thousand revolutions a minute. The inlet valves are mechanically operated, and have a variable lift. The contents of the honeycomb radiator are about 2½ gallons. The size of tires are 910x90 mm. (35¾ in. x 3½ in.) in front, and 920x120 mm. (36¼ in. x 4¾ in.) on the driving wheels.

In India the price of gasolene has been reduced. Motorists can now obtain it for 83 cents a gallon.

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GETTING OUT THE CAR

How the Expert Chauffeur Makes the Horse and Coachman Seem Like Snails.

Many different phases of the superiority of the motor carriage over the horse drawn vehicle have been cited, but a Motor World man a few days ago witnessed the demonstration of one superior convenience that is valuable and yet is not generally mentioned, if indeed it has been pointed out at all.

This is the promptness and great saving in time afforded society people by using a motor car for calling, shopping, catching a train or for any sort of a trip. Men and women of leisure are often more pressed for time and impatient of delay than Wall Street operators. When they call by telephone to their stable to get a horse-drawn coupe or other vehicle, the usual formula is:

"How soon can you get the so-and-so coach and pair around to the house?"

More often than not there is some cause for a trifling but annoying delay. The horses are feeding, one is being shod, they have not been cleaned, or some other little thing hinders prompt service. At the best the horses must be given a superficial rub with a cloth and carefully harnessed in a way that causes a delay of from fifteen minutes to half an hour. When the owner has been suddenly called upon to go somewhere or has neglected to give due notice to the stable of his wants, this slight delay is a grievance. It involves being obliged to wait with bad grace anyway, and it sometimes involves being late in a way that is serious.

For the service of his automobile the formula of the private owner over the telephone is:

"Bring the car around right away."

This order results in the automobile being at the house inside of a few minutes. It is like sending a fire alarm and getting out the engines. This was splendidly illustrated quite in an everyday sort of way at the Barry & Hayes garage. The new Mercedes car of Frank J. Gould stood on the floor, and Mr. Gould's chauffeur, Harry H. Hill, was sitting at ease on the seat reading a newspaper. The car was shining like a sample at a show and the chauffeur was dressed in a new looking walking suit and a derby hat.

One of the employees of the place put his head out of the office door and nodded silently to Hill. The chauffeur exclaimed interrogatively: "For me?" An affirmative nod was the reply and before the head of the clerk had been withdrawn and the office door closed the chauffeur was out of the seat and on the floor in front of the car giving the crank a whirl. He had shed his coat as he leaped from the car. Two turns of the crank and the engine was going, in a few seconds more Hill was on the steering seat with his leather operator's coat on and the big vehicle was moving slowly toward the door. Passing the office the chauffeur tossed his tweed coat and derby hat to a man on one side of the car, while from the other side he received his leather head dress. Then the car glided out of the garage and whipped around the corner.

As the owner lived only two blocks from the storage place his car undoubtedly was in front of his house within two minutes from the time he had telephoned for it. It was out of the garage in less than one minute after the message was received. This was not any prearranged exhibition, but was due just to a chance call that came while visitors were present. One of those who witnessed it all exclaimed:

"Gee, whiz! That's service for you! Why it's just like being in an engine house when an alarm comes in."

Up Fort Lee With Five Passengers.

"Until a couple of weeks ago I was not quite so confident as I wanted to be about the new Searchmont car," remarked Gaston Plaintiff, who, during Manager Greene's illness is in charge of the Wanamaker automobile interests in this city. "It was not that I had any reason to think that it was not all right; I simply felt that until I gave one a thorough test there would be an unsettled feeling in my mind."

"Well, a couple of weeks ago I had the chance I was looking for. One of the cars came over, and I loaded it up with five people and started for Jersey. On the way to the Fort Lee ferry the car behaved splendidly, and I got well acquainted with it. As soon as we got across the river I headed her up Fort Lee hill, determined to see what she was capable of. Up she went, without a skip or a falter, the five people on board seeming to make no difference, and we reached the top almost as easily as if it had been only a slight grade.

"That settled it in my mind, and I am only waiting for the factory to make deliveries to begin an active campaign. We expect the first car next week, and after that they will come along in quantities. We have a number sold, and from the way the car is taking there will be no trouble to dispose of many more of them.

Demand for Small Horns.

Small horns, not more than six or eight inches in length, and with a two-inch bell, are making a good seller, according to a New York jobber. They retail for about $1.50 or $2. They are put on runabouts and second-hand cars, and are very serviceable. They give a short, sharp toot that can be heard for quite a distance.

Railroad Rates That Vary.

Some rare inconsistencies are found in the charges made by railroads for hauling automobiles as freight. A jewel of this sort was shown to a Motor World man the other day by a New York agent, who was charged three-fourths as much for one car as he was for three on invoices from the same factory.

WORKED WITH ONE PENNY

Little Trick in Starting That Caused the Visitor to Cheerfully Part With the Coin.

The days when one can put a penny in the slot and get an automobile have not yet arrived, but you can put a penny in the slot and make one run. This may not be news to old stagers in the electric vehicle business, but one man who thought he was well posted learned it only the other day in a way that impressed him with the notion that he had a narrow escape from being financially ruined.

He was in a garage uptown in New York city, not a hundred miles from the Automobile Club, and was conversing with the head of the firm when one of the employes entered the office and asked for a plug to fit a certain Columbia machine.

"You don't need one. Use a penny," replied the proprietor.

"Is that so?" remarked the visitor. "It's a new one on me. I've heard of a nail and a key and such things, but I never knew of a coin being used for a plug."

"Come here and I'll show you," remarked the proprietor, fumbling in his pocket as he led the way to a Columbia stanhope.

"Got a penny?" he queried suddenly.

The inquisitive visitor produced the coin and silently handed it over. The demonstrator wedged the penny crosswise, edge up, in the socket made for the plug, and readily started the car. Then he repeated the experiment successfully with another make of electric.

"That's worth knowing," remarked the proprietor of the establishment, and as the talk turned to other subjects he absentmindedly slid the borrowed penny into his pocket.

"Yes, that information was worth a cent," remarked the man as he left the store, "but holy smoke! I'm glad it didn't need a five-dollar gold piece to illustrate the trick."

Southworth now has two Stores.

By the acquisition of the garage at 10 Clinton street, Brooklyn, A. G. Southworth now has under his control establishments possessing a capacity for 300 cars. The Clinton street place, which has just been leased, has been operated by the Maltby Automobile and Motor Co., but will pass from them on April 1, when A. W. Blanchard will take charge as manager for Southworth. The latter will, of course, continue to operate the station at 342-344 Flatbush ave., and both it and the Clinton street place will carry a stock of Waverleys, Ramblers, Generals and Toledos, for which the exclusive agency is held.

It is now stated that it was one of the eight-cylinder C. G. & V. cars that C. M. Schwab recently ordered for his own use. It is to develop 80 horsepower.

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The Farmer Wants his "Chane."

It usually is not pleasant to be reminded of the days of our trouble, but the reminder of one experience with a car in a ditch was found to be intensely amusing by Worthington Butts, of Buffalo, when it came in the form of the letter printed below.

From the earliest days of automobiling "Worthy" Butts, as he is familiarly known, has been a conspicuous traveller on the roads about Buffalo in his Packard. He owns a rare reputation as a daring operator, and many are the strange stunts and weird adventures in which that Packard car has participated.

One of his interesting excursions included an aerial dive from the roadway near Boston Centre into the bed of a creek, and the car rested there until a farmer hitched a chain and team of horses to it and hauled it forth to continue its wonderful career.

That was almost a year ago, and it was about forgotten by "Worthy" until he got this original note:

New Oregon, N. Y.

Dear Sir::—

Do you remembre the old man yet that helpt you out of the creek below Boston Center I am wisher fore my chain no dout but what you remember yet that you throd it on youer rick at last I found out youer name and found out wher I can call on you.

So Pleas take the chane ore els the money for it to Mrs. Blank 8444 Swan fore you cant ekspect me to loos the chane yet after I helpt you out of youer trouble but Pleas take it ther ride away fore I woll call for it first part of next weeke.

Yoners truly

Buyers not "Going it Blind."

"Any one who thinks that automobile buyers select at haphazard or without looking over the field are very much mistaken," remarked a salesman in a metropolitan establishment last week.

"They come in here cocked and primed about our cars as well as those of other dealers. They ask about different features and show considerable familiarity with them, even although they may never have owned or even driven one. Another thing that has impressed me is the way they read the automobile papers. It seems as if as soon as a man makes up his mind to buy an automobile he gets an automobile journal and posts himself on the subject. They will tell us about something that appeared in a certain paper or mention that their attention was directed to our car by seeing a description of it there. One man even took a copy of the Motor World out of his pocket so that he could compare a cut there with the car itself.

Homan & Schulz, of No. 134 West Thirty-eighth street, New York, have taken the agency for Locomobile gasolene touring cars. As they now handle the Northern runabouts, this will give them two choice lines to offer every class of customers.

Winton in Tiffany's Window.

Dr. Frank W. Brandow, of Pittsfield, Mass., who has revealed so much ingenuity in making miniature models of mechanical objects, recently completed a model of the 1903 Winton touring car that is considered such a jewel of artistic workmanship that it is being exhibited all this week in the window of Tiffany, the New York jeweler.

This is the second Winton automobile modeled by Dr. Brandow, as last year he reproduced a 1902 car in miniature. The new model is only eighteen inches in length and is exquisitely worked out in brass, silver plate and oxidized silver, with an upholstering of black kid. It has a clever reproduction of a Solar headlight lamp on it, and is, all told, a most perfect copy in diminutive of the Winton, which is selected by the Doctor as a representative American car.

Here's a Portable Jack.

In the Kenosha Auto-Jack, which is being marketed by the Badger Brass Co., Kenosha,



Wis., an article of exceptional merit is offered to motorists. It is moderately priced, of light weight and compact, so that it can be readily carried in the average tool box, yet sufficiently powerful to lift one and one-half tons. Closed, the jack is only 12 inches in height, and it raises to 18 inches, so that it will lift wheels 34 inches in diameter.

The Kenosha jack, a good idea of which is given by the cut, is constructed of the best grade of malleable iron, and is positive in action. It has a rack and pinion movement, the pinion being actuated by a worm, to which the operating handle, a box wrench, with cross handle, is applied. The jack can be instantly raised to limit of height by simply pulling up the rack. This throws the worm out of gear until the rack is dropped, when it falls into gear by its own weight. There are no springs, pawls or other small parts.

How Local Shows Help.

As instancing the value of some local shows, the experience of the Wanamaker establishment at the Philadelphia exhibition a few weeks ago is interesting. During the week fifty-seven retail orders for Cadillac cars were booked. As Manager Bunting of the Wanamaker store put it: "We shan't be able to get this number of cars, of course, but it is gratifying as indicating what can be done with a good car by pushing it properly."

Features of Foreign Chain Trade.

"This foreign chain business is a queer one. Simplicity is the last thing to be found in it, as I have learned in the last few weeks." The speaker was Charles E. Miller, the well known jobber of this city, and he was pointing to a huge Brampton chain evidently made for a high powered car.

"You would hardly believe that there are seventy different chains for automobiles made by the Brampton people, but such is the case. They have entirely different chains for each of the foreign make of cars—Panhards, Mors, Daimlers, etc. Not only that, but there is a special chain for each type of car of these makes—different in both pitch and width. For an 8 horsepower car a chain of one size is used; for a 12 horsepower car a larger and stronger one; for a 16 or 24 horse a still stronger one. The lighter chain cannot be fitted to the heavy car, for the sprockets of the latter are cut differently.

"Another thing that is peculiar, and which gave us a great deal of trouble at first, is the Continental custom of using millimetre measurements. We had to reduce them to inches for catalogue purposes, and it was a big job."

Packard vs. Trolley Car.

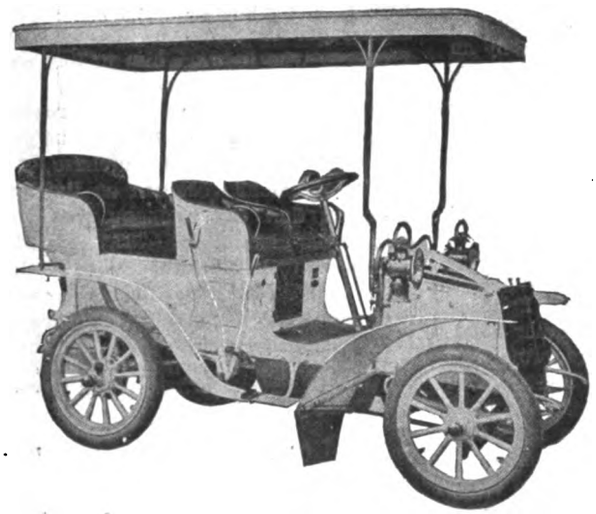
From Panhard to Packard is but a slight change, as far as names go. But the transferral is a significant one in the case of the cars themselves. Such a transfer was made recently by R. A. Alger, jr., of Detroit, who purchased a Model F Packard in place of a 24 horsepower Panhard that he had previously used. It was not long after he became its possessor that the Packard was put to a severe test. It tried conclusions with a Detroit streetcar moving at speed, and when an account of stock was taken it was found that both showed the effects of the collision. The Packard car had the headlight and bonnet entirely demolished, and the body was bruised and cracked. The engine, however, was not disturbed in the least. It was driven to the garage under its own power, and beyond needing a new radiator was none the worse for its unusual experience.

Why Morses Have Been Delayed.

E. T. Kimball, of the Central Automobile Co., is awaiting the arrival of "January deliveries" of Mors cars that he bought while in Europe. Advices just received from France tell him that he will have some 11 horsepower cars by the end of the month, and some of the 18 horsepower early in April. The Mors factory at the time the letter to Mr. Kimball was written was just completing its "December deliveries." First a fire and then a strike among the factory hands have been the causes of this factory being so far behind in deliveries. One of the 18 horsepower Mors coming to the Central company has been sold to Clarence W. Mackay.

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The CHAINLESS CUDELL



8 and 12 h. p. 2 cylinder and 16 h. p. 4 cylinder

SURREYS.

J. C. BRANDES, U. S. Agent CUDELL & CO.

28 West 33d Street. Telephone, 2754 Madison.

Downtown Garage, Motor Vehicle Storage & Repair Co., 131 West 31st Street. Telephone, 2375 Madison Square.
Uptown Garage, C. L. Bell & Co., 250 West 80th Street. Telephone, 2562 River.
Baltimore Agency, A. G. Spalding Bros., 25 West Baltimore Street.
Philadelphia Agency, Motor Vehicle Power Co., Sixteenth and Wood Streets.
Summit, N. J., C. C. Henry. Yonkers, N. Y., William Shrive.

THE BALANCED MOTOR

employed in all **HAYNES-APPERSON CARS,** IF OF THE FAMOUS DOUBLE OPPOSED CYLINDER, known as the Haynes-Apperson type, which has proved its superiority over all other forms. This motor was designed for automobile propulsion by the **HAYNES-APPERSON COMPANY** and is used exclusively in every type of carriage they manufacture. Many manufacturers have tried to imitate this construction but have produced nothing equal to the original.

PORTRAIT OF A WINNER.



No. 1—Phaeton, 12 h. p.

Won N. Y. to Rochester Test, Oct. 1901, beating all American machines; our only other entry was second. Won 5 mile Track Race, Buffalo, 1901; won 10 mile Track Race, Detroit, 1901, making World's Record for 10 miles for under 2,000 lbs class. Ran Kokomo to N. Y., about 1,000 miles, in 73 hours; regular stock machine, 9 h. p. phaeton, 1903 model.

We shall be glad to give you any information of a specific nature that may be desired. Ask for our printed matter.

Branch Store:
381-385 Wabash Avenue, CHICAGO.

Eastern Representatives:
Brooklyn Automobile Co., 1239-1241-1243 Fulton St., BROOKLYN, N. Y.

New York Location to be announced.

National Automobile & Manufacturing Co., Pacific Coast Agents, SAN FRANCISCO.

HAYNES-APPERSON CO., Kokomo, Ind., U. S. A.

The oldest makers of motor cars in America.

Watch this space for the good points of the HAYNES-APPERSON Automobile.

THE SHELBY MOTOR CAR CO.

SHELBY, OHIO.

MANUFACTURERS OF

The Shelby

GASOLENE 10 AND 20 H. P. CARS.



OUR MOTOR. Two PISTONS in one CYLINDER; takes charge in the center, forcing both pistons in an outward direction, reducing vibration to a minimum. Over 40% better efficiency than in a single acting motor.

This is only one of the many superior points found in the SHELBY CARS. For further particulars,

Address Department "F"

THE SHELBY MOTOR CAR CO.,

SHELBY, OHIO.

THE HOME OF RELIABLE CARS

BANKER BROS. CO'S.

Automobile Palace

141-143 West 38th St., New York

LARGEST DEALERS IN AMERICA.
NO EXPERIMENTS SOLD.

PITTSBURG,	NEW YORK,	PHILADELPHIA,
Baum and Beatty Sts.	141 & 143 West 38th St. 50 West 43d St.	629-33 N. Broad St.

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Duty on Lamp Lenses Stands.

Efforts to secure a reduction of import duties on lenses used in bicycle and automobile lamps have failed. The Board of Classification of the United States General Appraisers, sitting in this city, last week handed down a decision refusing to change the classification, as asked by the importers, Hammel, Riglander & Co.

The goods covered by the protest are lenses of glass, ground, assessed at 45 per cent ad valorem and 10 cents per dozen pairs, and claimed to be properly dutiable at the rate of 45 per cent ab valorem as "projecting lenses."

The question was passed upon by the board adversely to the government in an unpublished decision dated April 20, 1902. That decision was rendered, however, on only slight evidence, and the board has now passed upon the question on a very full and complete record.

The importers contended that the articles are not included within the provisions of paragraph 109, and pointed to the phrase "per dozen pairs" as showing that only spectacle lenses are included within this provision; and that even if the lenses be included within the provisions of this paragraph, they are more specifically provided for in paragraph 111 as projecting lenses.

The contention of the government was that the term "projecting lenses" in paragraph 111 refers only to mounted articles.

General Appraiser Fischer, who wrote the opinion for the Board of Classification, overruling the importers' contention, says in part:

"The claim of the importers that the lenses in question are not included within the provisions of paragraph 109 is answered by an inspection of the official samples, which show that they are lenses of glass, ground and polished to spherical form. This brings us to the second and main proposition—namely, as to whether the lenses are projecting lenses within the meaning of that term as used in paragraph 111.

"At the hearing counsel for the importers endeavored to show that a projecting lens was a lens capable of projecting light or image. The government, on the other hand, endeavored to show that the term 'projecting lenses' was a commercial term, and covered only an instrument consisting of a number of lenses arrenged together in a mounting with decises for regulating the same.

"We think the language of the two paragraphs shows that the term 'projecting lens' in paragraph 111 does not relate to unmounted lenses, and that it was used to mean a mounted combination of lenses, for otherwise either that provision or the provision in paragraph 109 would have no effect.

"Furthermore, as showing the intent of Congress, it should be noted that the articles provided for in paragraph 111, with the exception of projecting lenses, are mounted articles in the nature of optical instruments."

'Frisco Concern in Court.

The affairs of the Universal Automobile Co., of San Francisco, Cal., are being aired in the police court of that city. R. B. Easley, a stockholder, claims that he was fleeced out of $3,000 by Manager W. J. Woolsey, who induced him to buy stock in the concern to that amount.

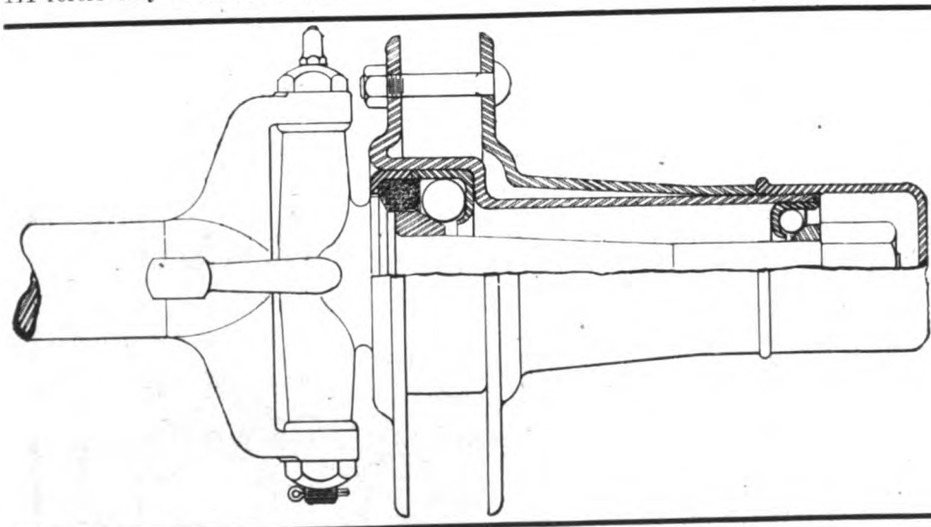
Easley claims that he was approached by Woolsey on December 10 last and induced to invest $3,000 in the purchase of stock in the automobile concern on the former's assertion that the company was indebted only to the amount of $1,200. Subsequently he sought to look at the books of the concern, but Woolsey declined to grant him that privilege. On making inquiries among certain stockholders he made the discovery that the company was involved to an amount greatly in excess of the sum represented by Woolsey.

Van Alstyne Building in Rochester.

An up-to-date garage is being erected for A. W. Van Alstyne, Rochester, N. Y., and is expected to be ready for occupancy by April 1. The building will be of brick, two stories high, 40 by 100 feet, and capable of storing one hundred and fifty automobiles.

The Week's Exports.

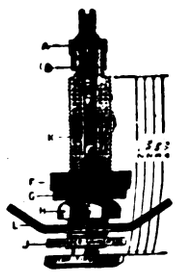
Havre—1 case motor vehicles, $208.
Liverpool—2 cases motor vehicles, $2,800.
London—22 cases motor vehicles and material, $9,632.
Lisbon—3 cases motor vehicles, $3,830.



THESE HUBS are drawn from Sheet Steel.
Extremely light and strong Hubs with a smooth surface for finish are obtained.
Center line of Spokes is close to Steering Head. Smooth and Easy Steering is obtained.
Races are GROUND IN POSITION.
Cones and Cone Seats on Spindles are GROUND TO GAUGE.
We manufacture for the trade only.

THE AMERICAN BALL-BEARING CO.,
CLEVELAND, OHIO, U. S. A.

SCHRADER UNIVERSAL VALVE.
Trademark Registered April.



SIMPLE AND ABSOLUTELY AIR TIGHT.

MOTOR TIRE VALVES, as shown in cut, are made in four lengths as shown. Cut is exactly half size of the 2 in. valve

SUPPLIED TO THE TRADE BY ALL TIRE MANUFACTURERS.

MANUFACTURED BY
A. SCHRADER'S SON, Nos. 30-32 Rose Street, New York.

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H. B. SHATTUCK & SON,

BOSTON, MASS.

Distributors of

Oldsmobile, Packard, Autocar, Searchmont

WE HAVE CONSTANTLY ON HAND CHOICE BARGAINS IN SECOND-HAND MACHINES

A full line of standard French and American accessories carried in stock.

STATE YOUR REQUIREMENTS. WE CAN MEET THEM, IF ANYBODY CAN.

The Beginning of the 'Bus.

One must go back to 1661 for the natal year of the omnibus. As the present name implies, this vehicle was intended for the use of all who desired to make trial of it, although neither the name nor the use belonged to it originally.

The famous mathematician, Blaise Pascal, is said to have introduced the important vehicle which is called the omnibus. Unlike most other men of learning, Pascal was more or less interested in the affairs of practical life. He was the inventor of the pushcart that now perambulates the streets.

In 1661 he had large wagons built for regular traffic in the heart of Paris. He allied himself in this undertaking with several influential friends, among whom was the Duke de Roannes.

In 1662 Louis XIV granted letters patent to Pascal, in which it was said that these carriages were intended for the comfort of poor people who had to go to courts of justice or who were sick and so poor that they could not afford to pay the two pistoles exacted by the chairmen and the drivers of coaches.

At first the use of the vehicle was not generally permitted. A royal decree forbade its use by s ldiers, pages, lackeys and other salaried servants, as well as artisans and porte s.

Pascal, in spite of the fact that he only lived to be thirty-nine, is said to have made no inconsiderable sum out of his invention. After the venicle had been in use for some sixteen years it was abandoned for various reasons. It was not until 1812 that it was again introduced, this time in Bordeaux, which city was followed, in 1821, by Nantes and in 1827 by Paris. The vehicle was improved, and rapidly became popular. In modern times the vehicle was called an omnibus simply for the reason that it was intended for the carriage of all, without any restrictions as to lackeys, pages or footmen.

Figures Proving Value of Good Roads.

To show the necessity of better roads a well-known engineer has estimated the cost of transporting goods over the highways. He figures that the cost of moving one ton by horse power over one mile of dry sandy road is 62 cents; over wet sand, 32 cents; over ruts and mud, 39 cents: over broken stones and ruts, 26 cents; over an earth road that is dry and hard, 18 cents; over a broken stone road that is in good condition, 8 cents; over stone paving, 5.33 cents; over asphalt, 2.7 cents. It may be argued that millions of dollars would be saved, and many tons of merchandise would be available in the markets, if the roads were such that transportation by wagon would cost not more than 5 cents a mile.

"IT STARTS FROM THE SEAT."

—THE—

"STEVENS-DURYEA"

HIGHEST TYPE OF GASOLENE CAR

J. Stevens Arms & Tool Co.

No. 690 Main St.,

CHICOPEE FALLS, MASS.



The pleasure of going when and where you wish safely, smoothly, silently, without elaborate preparation or tiresome interruption is characteristic of

NATIONAL ELECTRIC VEHICLES

Perfection of service due to extreme simplicity of construction. A child can operate a "National." Peculiarly the "ready" automobile for practical, every day, all-the-time use.

Write for catalogue showing wide variety of latest electric vehicles

NATIONAL MOTOR VEHICLE CO., 1400 E. 22d St., Indianapolis, Ind.



THIS ½ page has been running in high-class publications of general circulations. This helps sell NATIONALS. Better get the agency.

National Motor Vehicle Co.,

INDIANAPOLIS, IND.

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The Week's Patents.

722,122. Device for Throwing Motors Into Gear. Ludwig Maurer, Nuremberg, Germany, assignor to Nürnberger Motorfahrzenge Fabrik "Union" G. M. B. H., Nuremberg, Bavaria, Germany. Filed May 15, 1902. Serial No. 107,445. (No model.)

Claim.—In a device for throwing motor-shafts into and out of gear in motor-vehicles and the like, the combination with suitable supporting-bearings, of a motor-shaft journalled therein, having an elongated crank portion and having limited endwise movement, a pitman connected to said crank to have sliding movement thereon, a friction-disk carried on the end of said shaft, a lever for moving said shaft longitudinally, and a friction-wheel adjacent to said friction-disk and adapted to be engaged and disengaged by the movement of the shaft and disk, substantially as described.

722,116. Motor-Propelled Vehicle. Frederick W. Lanchester, Birmingham, England. Filed July 12, 1902. Serial No. 115,357. (No model.)

Claim.—1. In a motor-propelled vehicle, the combination with a prime mover, of an engine capable of acting either as an elastic-fluid compressor or a motor, a reservoir for the fluid, and changeable connections whereby said engine may be caused to store fluid in said reservoir, or the stored fluid may be used to drive said engine, a cooler for cooling the air delivered to the reservoir, and a heater for heating the air delivered from the reservoir to the engine, substantially as described.

722,458. Speed changing and reversing mechanism. Allan C. Sargent, Graniteville, Mass. Filed Nov. 21, 1902. Serial No. 132,-212. (No model.)

Claim.—1. A speed varying and reversing mechanism, comprising a central shaft, a pair of gears fixed thereon, sleeves revoluble on the said shaft at opposite sides of said pair of gears, a gear at the inner end of each sleeve, a casing, two pairs of planetary gears carried by the said casing, each pair meshing with one of the said fixed gears and with the gear on one of the sleeves, means whereby the respective sleeves may be locked from rotation, and a clutch co-operating with said casing and one of said sleeves, whereby the casing and said sleeve may be locked together, substantially as described.

722,459. Tire for vehicles. Oscar Schaefer, London, England. Filed Nov. 19, 1901. Renewed Jan. 13, 1903. Serial No. 138,830. (No model.)

Claim.—1. The herein described process of making a vehicle tire, which consists in applying a layer of unvulcanized rubber to a suitable core or mandrel in the form of a closed ring, braiding upon said layer a plurality of threads in open mesh, said threads being all equally disposed and laid on simultaneously and under a strong and uniform tension at all parts, applying a layer of unvulcanized rubber upon said layer of braiding, continuing said braiding and the application of said layer of rubber until the same overlap the inner end or beginning, cutting off said braided layer or the threads composing the same at a point beyond said inner end, applying a final covering layer of unvulcanized rubber over the mass, and vulcanizing the whole, substantially as set forth.

722,466. Steam generator. John W. Sutton, New York, N. Y. Filed Aug. 20, 1902. Serial No. 120,327. (No model.)

Claim.—1. A steam generator for automobiles, consisting of an exterior double walled shell having a rounded off top part or dome and tiers of superposed groups of coils, each group consisting of intermediate and side coils arranged adjacent to each other in said shell, the terminals of the coils of each group passing through the inner wall of the shell and communicating with the water space of the generator, and the coils having a rising inclination from the lower to the upper terminals, substantially as set forth.

722,532. Speed indicator for vehicles. Alden L. McMurtry, New York, N. Y. Filed Oct. 3, 1902. Serial No. 125,814. (No model.)

Claim.—1. A vehicle speed indicator comprising the combination of a part actuated relatively to the speed at which the vehicle is travelling, an indicating device associated therewith showing a definite distance traversed, and a stop watch or timepiece, automatically set into operation and automatically arrested by the speed indicator actuating mechanism, and having the usual indicating devices and which shows the time occupied in traversing such definite distance.

722,544. Combined exhaust valve and igniter. Joseph Tracy, New York, N. Y. Filed Oct. 21, 1902. Serial No. 128,130. (No model.)

Claim.—1. A combustion engine exhaust valve, having a longitudinal bore in its stem forming an igniting chamber opening into the combustion chamber.

722,567. Exhaust silencer. Middleton Crawford, London, England, assignor to Silent Motor Car Syndicate, Limited, London, England. Filed Dec. 3, 1901. Serial No. 84,569. (No model.)

Claim.—1. In an exhaust silencer, the combination of an expansion chamber, a conduit between the chamber and the engine cylinder, a series of concentric compartments through which the gases pass successively from the expansion chamber to the atmosphere, and a non-return valve placed between the expansion chamber and the compartments, substantially as set forth.

722,587. Alarm for vehicles. Joseph M. Justen, Toledo, Ohio, assignor of two-fifths to George W. Birchall and Charles R. Clapp, Toledo, Ohio. Filed Sept. 25, 1902. Serial No. 124,856. (No model.)

Claim.—1. An apparatus of the class described, comprising a bracket or frame designed to be mounted on a vehicle, a transverse shaft mounted in the bracket or frame and capable of a limited oscillatory movement, gearing connecting the transverse shaft with one of the wheels and adapted to be separated by the oscillatory movement of the said shaft, a counter shaft mounted in the frame or bracket, gearing connecting the said shafts, means carried by the counter shaft for striking a gong, and spring actuated operating mechanism connected with the transverse shaft and normally holding the same out of operation, substantially as described.

722,600. Pneumatic tire. Edwin Midgley, London, England. Filed May 9, 1902. Serial No. 106,641. (No model.)

Claim.—1. A pneumatic tire comprising in its construction a rubber tread portion, and a strip of links loosely connected together and embedded in said tread portion so as to be engaged and entirely surrounded by the rubber forming the tread portion.

722,606. Electrical contact brush and method of producing same. Homer N. Motsinger, Pendleton, Ind., assignor to Motsinger Device Manufacturing Company, Pendleton, Ind., a corporation of Indiana. Filed Aug. 25, 1902. Serial No. 120,928. (No model.)

Claim.—1. A contact brush consisting of a central core of carbon, and an external wrapping of metallic gauze, the edges of which are brought together and connected by solder.

722,611. Vehicle body. Harry McLoughlin, Stapleton, N. Y., assignor to Barton E. Kingman, New York, N. Y. Filed Aug. 9, 1902. Serial No. 119,109. (No model.)

Claim.—1. A vehicle body comprising a tubular metallic frame, rivet strips rigidly attached to said frame and comprising strips of metal having struck up therefrom integral tubular rivets, and metallic panels having perforated edges fitted over said rivets, the projecting ends of the rivets being expanded to clamp the panels to the rivet strips, substantially as described.

722,612. Tire for wheels of road vehicles. Berne Nadall, Kingston-upon-Thames, England. Filed July 22, 1902. Serial No. 116,-583. (No model.)

Claim.—1. The combination of a wheel rim, a metallic spring corrugated in the direction of its length to form a rib, a tire adapted to fit over said rib, side pieces or flanges attached to said rim, and bolts passing through said side pieces and through the lower portions of said tire and said rib, substantially as described.

722,629. Internal combustion engine. Carl C. Riotte and Carlton R. Radcliffe, New York, N. Y., assignors, by mesne assignments, to United States Long Distance Automobile Company, Jersey City, N. J., a corporation of New Jersey. Filed Sept. 11, 1902. Serial No. 122,913. (No model.)

Claim.—1. In a hydrocarbon engine, a cylinder, a combustion chamber therein, a piston therein, a pressure reservoir having a pressure therein in excess of the highest working pressure, an air inlet, said piston acting to compress air in said cylinder, an exhaust valve and means for forcing a combustible mixture into the space above the piston against air pressure and a rising working pressure therein, said air pressure being below the point of ignition, and means for igniting.

722,671. Gas Engine. Leopold F. Burger, Anderson, Ind., assignor to Woolley Foundry and Machine Works, Anderson, Ind. Filed October 21, 1901. Serial No. 79,374. (No model.)

Claim—1. In a gas engine a governing valve casing, provided with independently movable air and fuel valves having concentric stems slidingly mounted on each other disconnected from each other when seated, and shiftable means carried by one valve stem for automatically engaging the other valve stem and thus connecting said valves to operate in unison; substantially as specified.

722,672. Valve for Gas Engines. Leopold F. Burger, Anderson, Ind,. assignor to Woolley Foundry and Machine Works, Anderson, Ind. Filed November 11, 1901. Serial No. 82,070. (No model.)

Claim—1. In a gas engine, a valve casing comprising a mixing chamber, an air valve at one end of said chamber provided with a stem extending therethrough, a fuel valve and casing located within said chamber, a push plate slidingly mounted upon said stem within the mixing chamber, for operating

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said fuel valve, and means for connecting said plate to said stem; substantially as specified.

722,697. Friction Clutch. Charles R. Greuter, Holyoke, Mass. Filed June 30, 1902. Serial No. 113,863. (No model.)

Claim—1. In a friction clutch the combination with a rotatable shaft, of a driven clutch member loose on the shaft, a driving clutch member rotatable with said shaft for frictionally engaging said driven member, a radially-movable support for the driving member of the clutch on which the latter may also swing in the plane of its rotation, and means on the shaft to hold said driving member normally concentric to the shaft.

722,723. Steering Gear for Motor Vehicles. Frederick Lamplough, Willesden, London, England. Filed April 16, 1902. Serial No. 103,106. (No model.)

Claim—1. In steering gear the combination with a right and left hand screw-threaded spindle, a divided nut and means for transmitting the movement of the nut to the steering wheel or wheels; of a casing inclosing said divided nut, and of means for adjusting the position of the spindle and nut in said casing, for the purpose specified.

722,787. Gas Engine. George Westinghouse and Edwin Ruud, Pittsburg, assignors to the Westinghouse Machine Company, a Corporation of Pennsylvania. Filed March 31, 1898. Serial No. 75,891. (No model.)

Claim—1. In an internal combustion engine, a hollow exhaust valve having one or more ports in its shell through which the cooling fluid that is supplied to the interior of the valve is discharged into the exhaust passage.

722,838. Method of Feeding Water to Steam Boilers. Samuel M. Guss, Reading, Pa. Filed October 20, 1902. Serial No. 127,917. (No model.)

Claim—1. The improved method of feeding water to a steam boiler by the combined actions of a force pump and an injector which consists in operating said injector with a flow of steam in excess of the amount condensed by the water supplied thereto, and injecting the jet therefrom into an independently forced stream of low temperature feed water moving in the same direction, the momentum of said low temperature stream co-operating with that of the injected stream and the entrained steam in the latter serving to raise the temperature of the combined streams to approximately boiling point.

722,846. Cylinder for Explosive Engines. Lawrence M. Johnston, Dayton, Ohio. Filed June 5, 1899. Serial No. 719,510. (No model.)

Claim—1. The combination with the cylinder proper having one end open and its other end closed by a solid integral head, a removable part or plate inserted centrally in said head, a water jacket on the cylinder and terminating at or near its closed end, and a cap entirely inclosing the end of the cylinder and its removable part and removably bolted to the end of the water jacket.

722,913. Electric Ignition Device. Nikolaus Schmitt and Johann Krannichfeldt, Cologne, Germany. Filed February 25, 1902. Serial No. 95,623. (No model.)

Claim—1. An electric ignition device comprising in combination a short, thin, flat and flexible strip of non-conductive material; short, thin, flat and flexible strips of conductive material disposed at a short distance apart, on one and the same surface of, and carried by, said non-conductive strip; a mass of combustible material provided between, and in contact with, said two conductive strips, and means to assist the passage of the electricity from one conductive strip to the other through said conbustible mass; substantially as set forth.

722,916. Motor Vehicle. Gordon J. Scott, Philadelphia, Pa., assignor to Charles H. Graham and George D. Bouton, Philadelphia, Pa. Filed May 16, 1902. Serial No. 107,572. (No model.)

Claim—1. In a motor vehicle the combination with the carrying wheels, of an electric motor having a plurality of armatures arranged in a circle at right angles to the axes of rotation of said armatures, field magnets forming a magnetic circuit common to the plurality of armatures, and gearing between said armatures and carrying wheels.

722,930. Brake Applicable to Motor Cars, Other Railway Vehicles and Revolving Shafts Generally. Edwin Wadey, Los Angeles, Cal. Filed June 11, 1900. Serial No. 19,976. (No model.)

Claim—1. The brake for retarding or arresting the motion of rotating bodies such as the wheels of railway cars or vehicles consisting of independently suspended brake blocks, that is to say, without brake beams in connection therewith as commonly employed, said brake blocks being independently suspended in pairs, two for each wheel, the brake blocks being at diametrically opposite parts of said wheels, a lever moving in a vertical plane operating in connection with one of the brake blocks of each pair of brake blocks, said suspended brake blocks being connected together in pairs, two for each wheel, by adjustable coupling links extending from the suspension centre of one of the brake blocks to the lower arm of the lever moving in a vertical plane in connection with the other brake block and operated by tension upon the upper arm of the aforesaid lever or levers, according to the number of pairs of brake blocks employed, in the manner and for the purposes, substantially as hereinbefore described.

722,987. Initial Heating Device for Hydrocarbon Burners. William R. Jeavons, Cleveland, Ohio. Filed March 6, 1902. Serial No. 96,886. (No model.)

Claim—1. An initial heating device for hydrocarbon burners having a non-combustible body with crevices at its side to conduct oil to the top thereof, and provided with a frayed-out bushy top edge, thus providing interstices to form a reservoir for oil, substantially as described.

722,988. Lighting Device for Hydrocarbon Burners. William R. Jeavons, Cleveland, Ohio. Original application filed March 8, 1898. Serial No. 673,045. Divided and this application filed December 22, 1902. Serial No. 136,145. (No model.)

Claim—1. In a lighting device for hydrocarbon burners, a corrugated support, and a strip of asbestos laid around one side of said support, substantially as described.

723,052. Collapsible Piston Valve. William G. Sinnamons, Syracuse, N. Y. Filed November 15, 1902. Serial No. 131,559. (No model.)

Claim—1. A piston valve formed of diametrically collapsible halves, and means for restraining said halves from expanding beyond a fixed diametral limit, substantially as specified.

723,057. Method of Manufacturing Pneumatic Tires. Uzziel P. Smith, Chicago, Ill., assignor to Frank A. Sieberling, Akron, Ohio. Filed December 10, 1902. Serial No. 134,688. (No model.)

Claim—1. The method of manufacturing pneumatic tires which consists in separating two layers thereof by a fugitive material, and one which will prevent the separated layers from uniting during the vulcanizing operation, and then vulcanizing the tire.

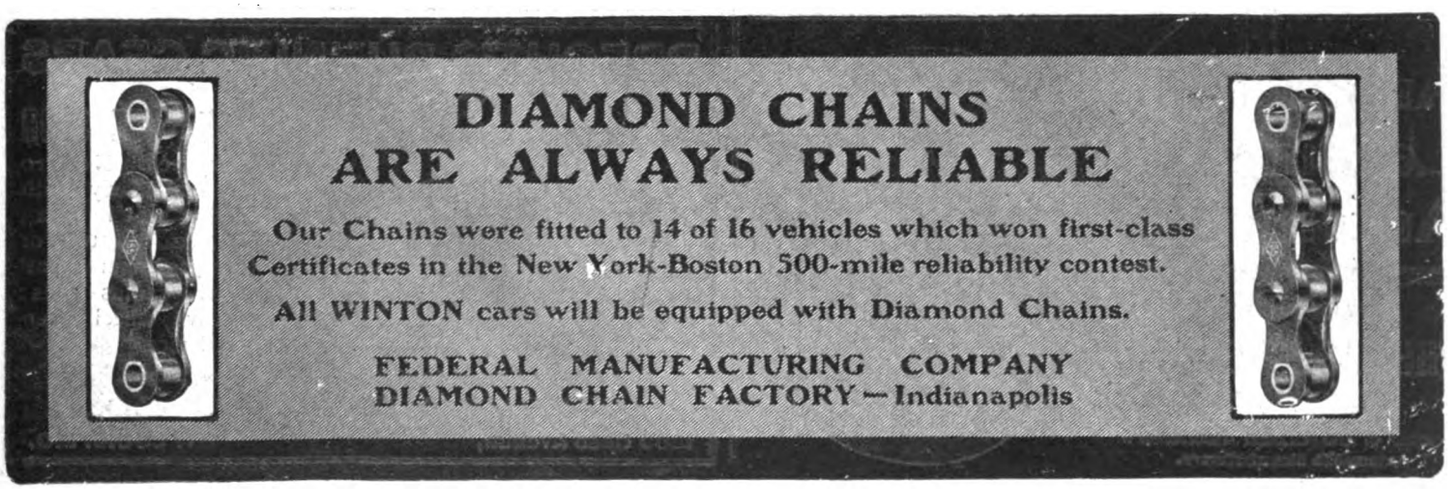
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39,926. Gas, gasolene and oil engines. Samson Iron Works, Stockton, Cal. Filed Jan. 22, 1903.

The word "Samson." Used since March, 1898.

39,885. Certain Named Lamps. Frederic E. Baldwin, New-York, N. Y. Filed Feb. 5, 1903.

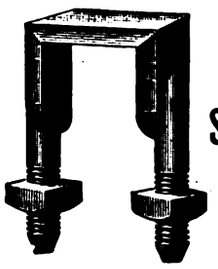
39,885. Autolyte. The word "Autolyte." Used since February 27, 1900.



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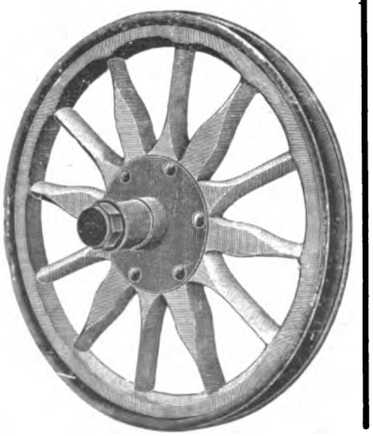
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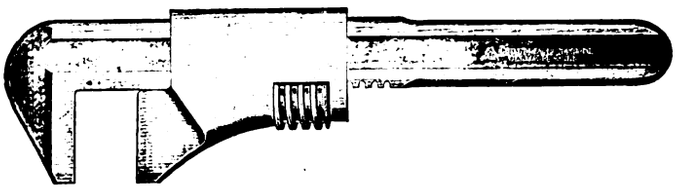
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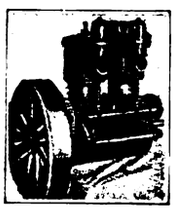


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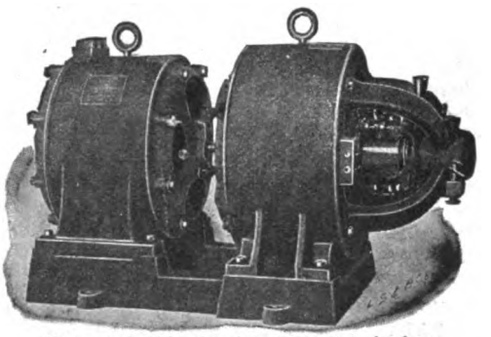
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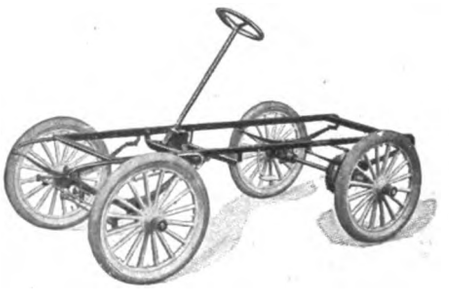
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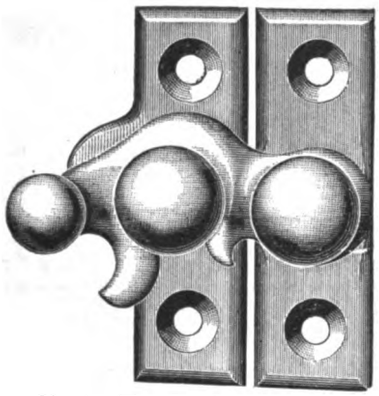
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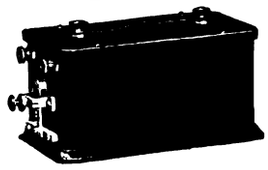
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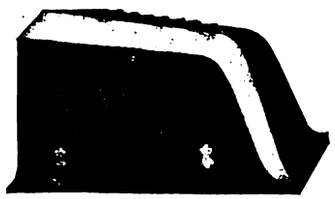
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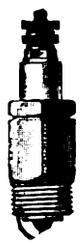


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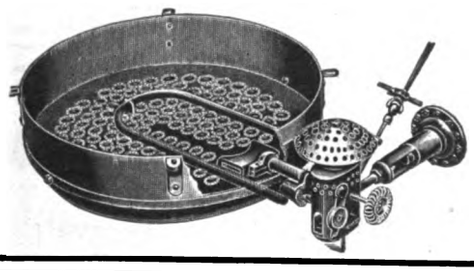
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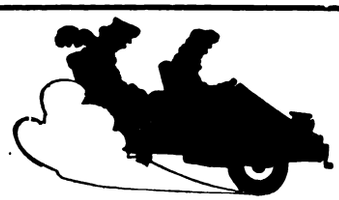


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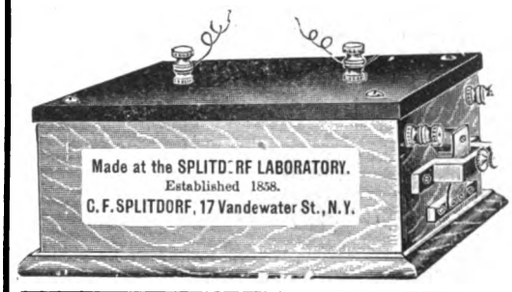


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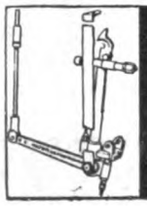
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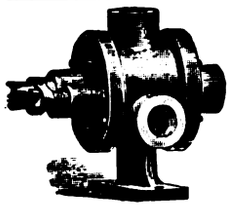
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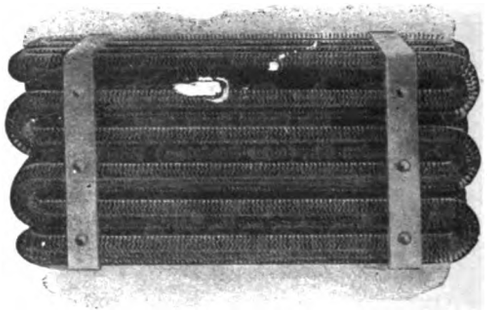
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Volume V.
No. 26.

New York, N. Y., U. S. A., Thursday, March 26, 1903

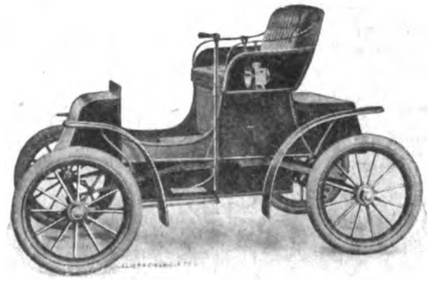
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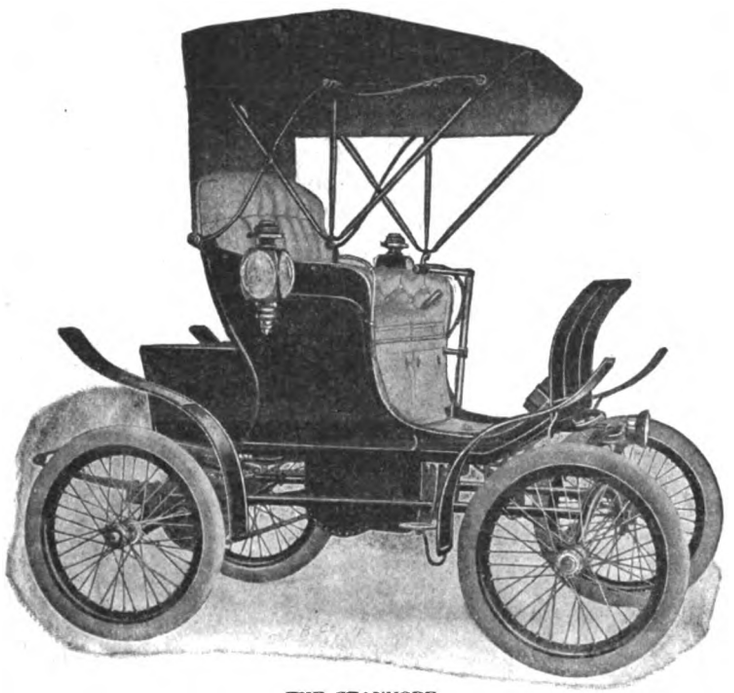
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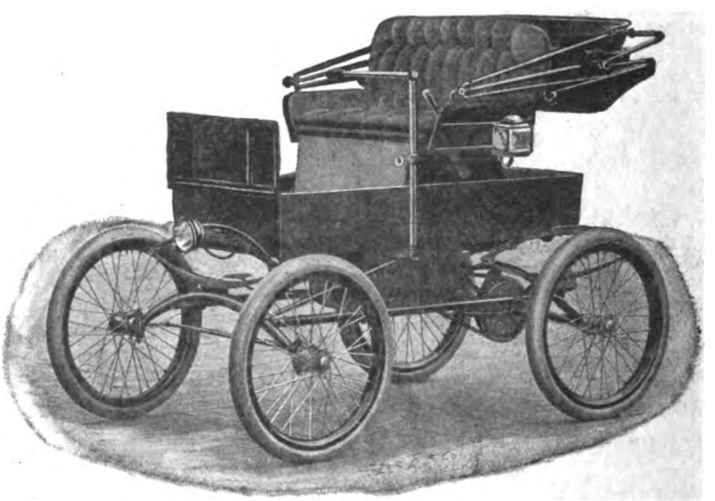
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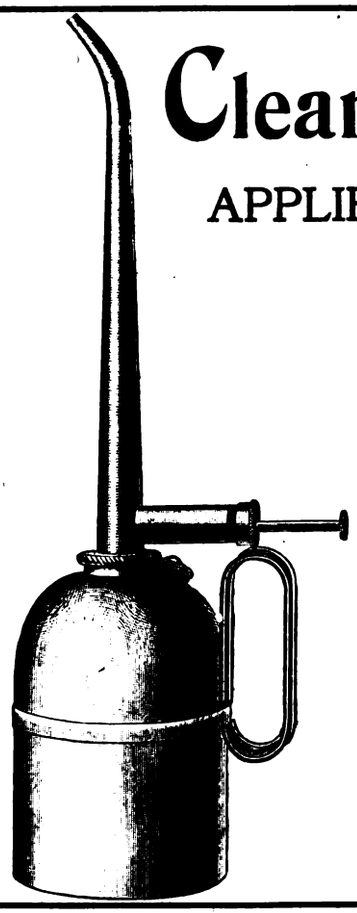
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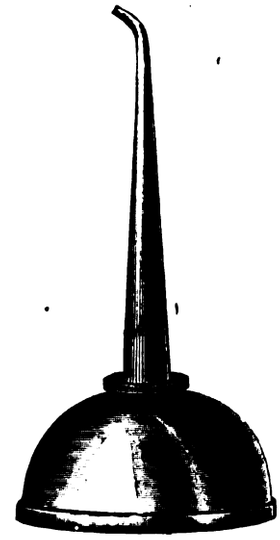


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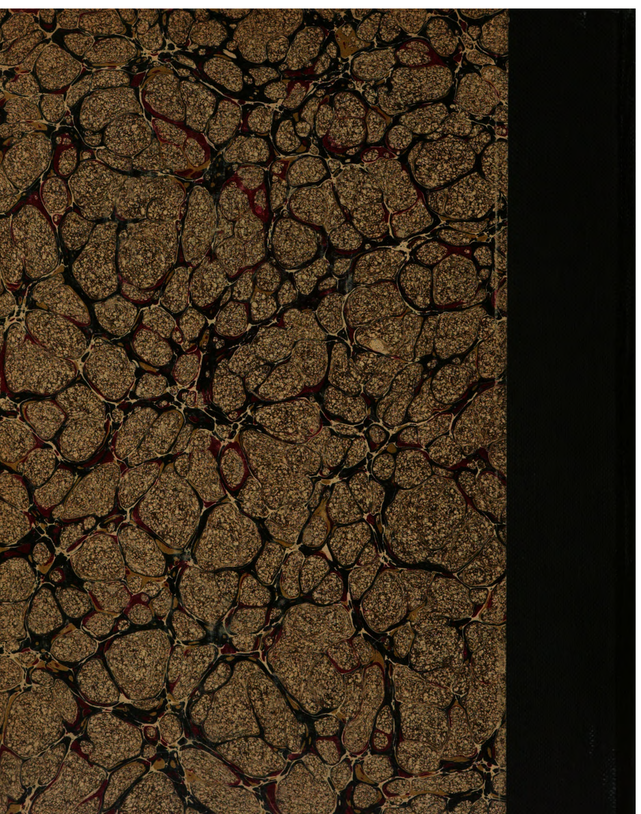
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